INFANTRY

The Professional Journal for Infantrymen

JUNE-JULY 1960

THE WHITE HOUSE
WASHINGTON

TO THE INFANTRY OF THE UNITED STATES ARMY:

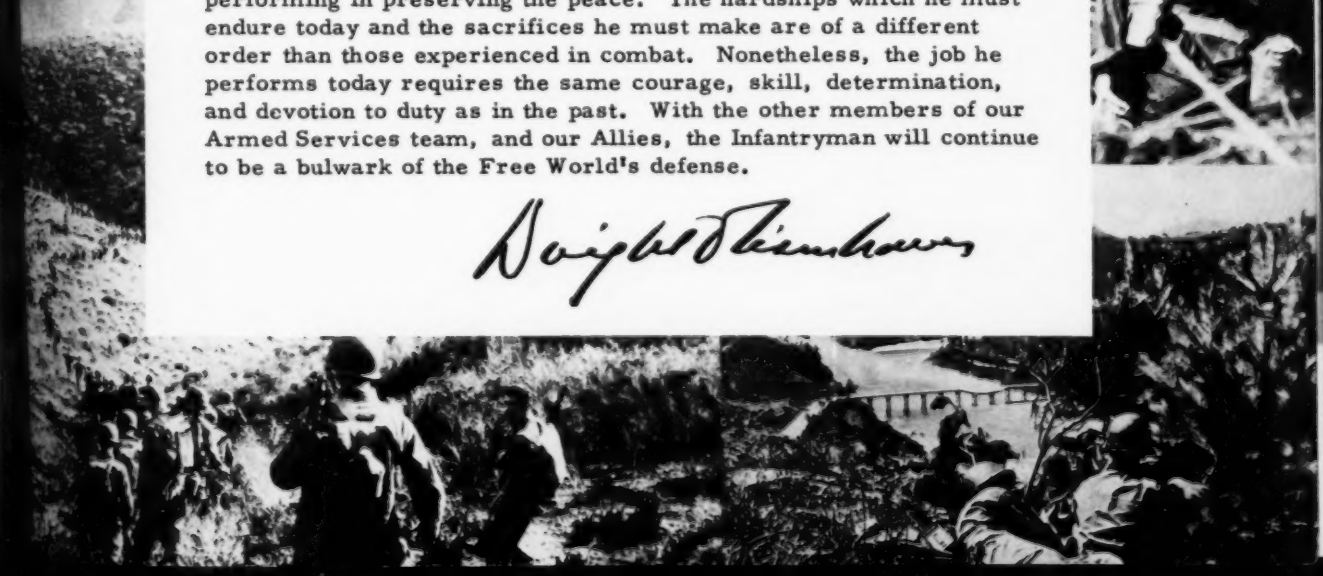
It gives me great pride to extend my personal congratulations to the United States Army Infantry on its 185th Anniversary.

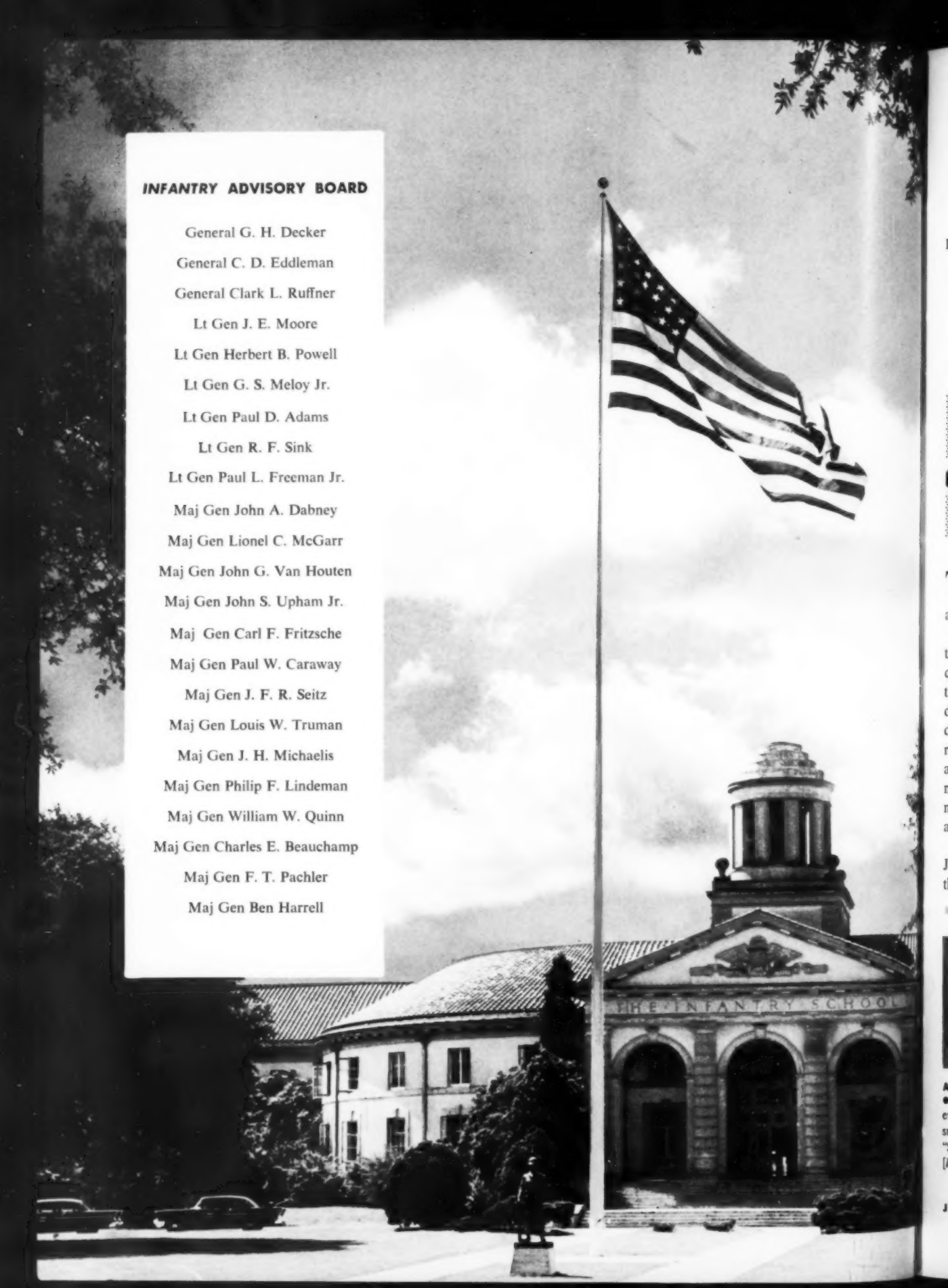
As a former Infantryman, I have long felt a close attachment to the often unsung, but always indispensable, doughboy.

During World War II, I was a witness to his progress from the sand hills of North Africa, through Italy, to the hedgerows of Normandy, and in Southern and Eastern France, and Germany. In the Pacific, his courage carried him across island and atoll -- from Corregidor to Japan. In Korea, it was again the courageous Infantryman who paid the heaviest price in preserving our freedom. And in all of these battles, he endured hardships, made sacrifices and distinguished himself with uncounted acts of valor.

Today, I again share the Infantryman's pride in the vital job he is performing in preserving the peace. The hardships which he must endure today and the sacrifices he must make are of a different order than those experienced in combat. Nonetheless, the job he performs today requires the same courage, skill, determination, and devotion to duty as in the past. With the other members of our Armed Services team, and our Allies, the Infantryman will continue to be a bulwark of the Free World's defense.

Dwight D. Eisenhower





INFANTRY ADVISORY BOARD

General G. H. Decker

General C. D. Eddleman

General Clark L. Ruffner

Lt Gen J. E. Moore

Lt Gen Herbert B. Powell

Lt Gen G. S. Meloy Jr.

Lt Gen Paul D. Adams

Lt Gen R. F. Sink

Lt Gen Paul L. Freeman Jr.

Maj Gen John A. Dabney

Maj Gen Lionel C. McGarr

Maj Gen John G. Van Houten

Maj Gen John S. Upham Jr.

Maj Gen Carl F. Fritzsche

Maj Gen Paul W. Caraway

Maj Gen J. F. R. Seitz

Maj Gen Louis W. Truman

Maj Gen J. H. Michaelis

Maj Gen Philip F. Lindeman

Maj Gen William W. Quinn

Maj Gen Charles E. Beauchamp

Maj Gen F. T. Pachler

Maj Gen Ben Harrell

U. S. ARMY INFANTRY SCHOOL

Maj Gen Hugh P. Harris Commandant
Brig Gen Chester A. Dahlen Assistant Commandant
Col Julian H. Martin — *Deputy Assistant Commandant* Col William H. Birdsong — *Director of Instruction*
Col Donald E. Cowan — *Secretary* Col William A. McKee — *Commander, The Student Brigade*

DEPARTMENTS

Col Willard E. Harrison — *Airborne-Air Mobility* Col Millard G. Bowen Jr. — *Command & Staff*
Lt Col Ausy P. Brown — *Communication* Col Paul T. Clifford — *Ground Mobility* Col Bernard G. Teeters — *Ranger*
Col Robert S. Cain — *Non-Resident Instruction* Col Richard W. Mabee — *Special Subjects*
Col Samuel T. McDowell — *Weapons*

ACADEMIC STAFF OFFICES

Col Cyril D. Sterner — *Combat Developments* Col James H. Hayes — *Doctrine Publications*
Col Daniel B. Porter Jr. — *Operations*

THE question is frequently asked: "How do you decide what articles are to be printed in *Infantry?*"

The answer, in a nutshell, is that the readers decide. Through periodic questionnaires, surveys of readers and through the letters to the editor, the desires of the *Infantry* audience are determined. For example, when we receive frequent requests for an article on a particular subject, we make a concerted effort to obtain this material from one of *Infantry's* authors.

A good case in point is "Military Justice," which is being published in this issue in answer to many reader requests. "Tannenberg" and "Bravo Attacks" (in this issue) were also written after similar articles received unusual response in the past two issues of *Infantry*. Thus, as the "Editors in conference" photo below indicates, much considered thought goes into the selection of material for the magazine—but, in the final analysis, it is still the *reader* who decides what goes in *Infantry*.

IT IS INTERESTING *to look back through old issues of* Infantry *to see not only what was written . . . but also who was doing the writing. For instance, a look at the 1939-1940 issues of* Infantry *reveals that the following officers wrote for their professional journal: Capt Russell L. Vittrup (now Major General); 1st Lt Roy E. Lindquist (now Major General); Capt Oliver W. Hughes (later Brigadier General); and Major Thomas W. Herren (later Lieutenant General).*

This is not to say that publication in Infantry *has anything to do with success in the Army. It does suggest, however, that professional writing has been done by many of our most illustrious soldiers.*

Today, we still welcome contributions from authors in the field—preferably material which is brief (1500-2500 words), timely and informative. If you write for Infantry, *you will not only be helping us—and other Infantrymen—you will also be developing a priceless asset: the ability to express yourself through the written word. Why not give it a try?*

A MOOT QUESTION

• *Infantry* continues to improve. However, it appears that if we follow the path suggested by Captain Iconoclast . . . "Should We Combine the Combat Arms?" [*Infantry*, Apr-May 60] . . . *Infantry* will disappear also. By the way, is there a determined move afoot to eradicate the Infantry branch? And why did Captain Iconoclast find it necessary to use a pseudonym? Could it be that he doesn't believe in his article and was writing because he was directed to do so?

Lt Col B. Stephens
402 Yeager Avenue
Fort Benning, Ga.

We never question the motives of an author. As to the future of the Infantry, please see the letter from the President on the cover of this issue. Ed.

CORNERSTONE COMMENT

• While only being on active duty a short time, we have found *Infantry* to be an excellent magazine with many aids to new and experienced officers.

However, we must take violent exception to a statement made in your article entitled: "Cornerstone for Combat Power" [*Infantry*, Apr-May 60]. The section reads like this: "In some instances, newly commissioned officers or untrained NCOs are assigned to the critical [cadre] positions with a decrease in training efficiency."

We happen to fall into the former

(Continued on page 55)

FROM THE COMMANDANT

It is indeed an honor for me to serve as Commandant of the United States Army Infantry School. The achievements of the School over the past forty years have gained it a reputation as one of the foremost military institutions in the world, and the Benning tradition has come to be synonymous with excellence in instruction and training.

Therefore, it is a distinct challenge to me and to other members of the School to maintain the high standards which have been set by the officers and men who have served here in the past. Moreover, I consider it of vital importance that we continue to encourage the progressive thinking which has been a hallmark of the School and of Infantry progress.

To ensure that the Infantry stays abreast of the rapid changes in technology, it is essential that *all* Infantrymen—both at the School and in the field—contribute their thoughts and ideas toward the betterment of the branch and the Army. As we change in any area, be it organization, tactics, weapons or equipment, it is necessary that we use the considered experience of *all* Infantrymen throughout the world.

Therefore, I strongly urge you to regard the School as a focal point for all matters pertaining to Infantry. As you encounter problems or develop new techniques in matters concerning Infantry, I hope that you will write to us so that we may benefit from your experience. At the same time, we shall endeavor, through *Infantry* and other means, to keep you informed of the changes and new developments here at the School. With such a free and continuous flow of this fresh, vital knowledge, all Infantrymen will benefit. Moreover, such an exchange of information and experience can and will result in a better Infantry—and a better Army.

Hugh P. Harris

HUGH P. HARRIS
Major General, USA
Commandant

EDITOR-IN-CHIEF
Maj William A. Brown

EDITORS
Capt Paul R. Lunsford
Capt Winfield A. Holt

EDITORIAL ASSISTANTS
Sp5 Gary D. Warner
Pfc Gerard W. Tate
Mrs Mildred F. Green

COMPTROLLER
Capt John H. Bishop

BUSINESS MANAGER
Lt James P. Falls

CIRCULATION MANAGER
Mrs Martha L. Biskup

Business and Circulation Assistants: Sp4 Willard L. Smith, Pfc Donald J. Lynch and Pvt Bruce N. Yuffee. Art Supervisor: Mr Alan C. Ramsay. Photo Assistance: Mr Charles Hardy.

THE FRONT COVER

The high regard which the President of the United States has for the United States Army Infantryman is set forth in his anniversary message, written for *Infantry*, on the cover of this issue. This letter should serve to remind us, on the occasion of the Infantry's 185th Anniversary, of the dominant role of the Infantry soldier in the past, present and future.

THE BACK COVER

THE INFANTRYMAN, a statue unveiled at Fort Benning on 3 May by the Secretary of the Army, is an impressive and lasting tribute to the Infantry soldier. The statue depicts the classic pose of the Infantry squad leader—powerful, dynamic, weapon in hand, leading his men forward—as always, the decisive element on the battlefield.

INFANTRY

The Professional Journal for Infantrymen

OFFICIAL PUBLICATION

UNITED STATES ARMY INFANTRY SCHOOL

Vol. 50 June-July 1960 No. 3

Articles

Sharpen the Sword ... ... *Capt Larry S. Mickel* 4
Bravo Attacks ... ... *Capt Rolfe G. Arnhym*
(Situation) 8
(The Plan) 60
Wired for Sound ... ... *Lt Robert A. Jones* 11
Training Infantry Leaders ... ... *Brig Gen David W. Gray* 14
The Case for a Strategic Assault Force ... *Capt Hugh McWhinnie* 22
Flexible Five ... ... *Col James H. Hayes* 26
S60 Flying Crane ... ... *Maj Victor K. Harwood* 36
"X" Seconds ... ... *Sgt Buckhorn* 38
Combat Leader 40
Military Justice ... ... *Capt William P. Tyson Jr.* 44
M-14 Manual of Arms 49
Tannenberg ... ... *Lt Col William F. Long Jr.* 50
Lost Patrol ... ... *Lt Nathan C. Vail* 56
Is This Enough? ... ... *Col Henry E. Kelly (Ret)* 66
Small-Arms Simulator 67
This Show is Not Rigged ... ... *Lt Col A. E. Seifert* 68

Features

From the Commandant 2
Welcome to the Infantry 7
For People in a Hurry 7
Infantry around the World 20
The *Infantry* Leader's Handbook 77

Departments

From the Editor 1
Letters to the Editor ... 1
Your Infantry Career ... 32
Tricks of the Trade ... 71
What's New for Infantrymen 72

Infantry's mission—As an official publication of the United States Army Infantry School, *Infantry* magazine has the mission of providing current doctrinal information on Infantry organization, weapons, equipment, tactics and techniques. Additionally, *Infantry* has the mission of providing information, through controversial and thought-provoking articles, on new developments and doctrinal trends, thus serving as a forum for progressive military thinking.

Published bimonthly by the United States Army Infantry School, Fort Benning, Georgia. Entered as second-class matter June 11, 1948 at the post office, Columbus, Georgia, under the Act of March 3, 1879. Subscription rates: permanent subscription, $9.00 payable every 3 years; 2 years, $6.00; 1 year, $3.50. Six copies a year. Foreign subscribers other than APO addresses add $.60 yearly for postage. Address subscription applications to BOOK DEPT., USAIS, P. O. DRAWER F, FT. BENNING, GA.

SHARPEN THE SWORD

With our STRAC force immobile on the end of an empty runway, it is time to apply a new twist to an old idea.

by CAPT LARRY S. MICKEL

The Marshall Award, named in honor of General George C. Marshall, was established by the Infantry School to bring recognition to the member of each Infantry Officer Advanced Class who submits, as a part of the Effective Writing Program, the article which makes the best contribution to the Military Art.

THE GLIDER, as a strategic aircraft, could prove to be our answer to the national problem of insufficient airlift for strategic Army forces.

During World War II, unpowered aircraft made significant contributions to the strategic efforts of all major powers. Unfortunately, however, our recollection of gliders has been associated with the often disastrous assault landing rather than to their long range deployment capability. Thus, it was in competition with *assault* transports that the glider was abandoned.

From the outset, let me make it clear that I do not propose the return of the powerless airplanes as assault aircraft. Rather, I suggest that the glider train can be a relatively inexpensive means of moving troops and equipment between widely separated *prepared* airfields. The assault capability is simply an extra dividend that has paid off in the past.

It is an aerodynamic fact that a far greater load can be towed than can be lifted by one aircraft. An analogy can be drawn to truck and trailer combinations, or even to railroad trains—for military gliders were, indeed, freight cars in the sky. And their range is limitless.

Gliders have been flown with 130 men aboard, many more than can be carried by the prop-jet C130 Hercules. The German Goliath, an experimental glider of the '40s, was reputed to have carried 140 men with their equipment, or between 16 and 18 tons of cargo. More recently, American industry has produced military gliders accommodating 16,000-pound loads without restriction as to range and at speeds upward from 200 mph. Others have been flown at 45,000 feet and still others have "coasted" 600 miles.

These unpowered air vehicles have been (and could still be) built of non-critical materials during a time of mobilization. Their forgiving nature (sink rate of 0.8 meters per second) allows for decreased pilot training

A MARSHALL AWARD Selection

time and the utilization of an "older" segment of the pilot population. Many Flying Sergeants of World War II fame were men of 35, trained as glider pilots in under five weeks.

Almost any prop-driven aircraft (other than light aircraft) is a potential prime mover for unpowered airplanes, singly or in groups, depending upon range. The CG4A glider, mainstay of past Army glider forces, was towed by numerous aircraft, notably the C47, C54 and C119 transports, B17 and B25 bombers, Navy PBY amphibians and even the P38 pursuit aircraft.

The birth of the military glider stems from the Versailles Treaty of 1919 which limited Germany in its production of large conventional aircraft. Thus, in May 1940, the Wehrmacht turned to gliders and a pool of 186,000 trained glider pilots to initiate airborne operations against Belgium, Luxembourg and the Netherlands. Today we face an even more stringent limitation than the Versailles Treaty—money.

In the last two-year period, less than eight % of the entire Air Force budget was spent for troop carrier aircraft, as strategic transports have taken a back seat to strategic bombers. The underlying problem, then, is to secure the most airlift for the available dollar.

Army planners today are confronted with two facets of the airlift deficiency: The first is the Air Force's inability to predesignate specific troop carrier wings for the air transport of elements of the Strategic Army Corps (STRAC); and, secondly, that not enough troop carrier aircraft exist to move a significant portion of these strategic forces.

The lesser of these sub-problems, lack of predesignation, prevents the formulation of detailed plans for air movement of men and machinery on the long haul. Thus, our "hitchhiking" units must await the actual arrival of aircraft before they are permitted to discover the type(s) and number of aircraft available for a strategic lift. The Lebanon move of 17 July 1958, involving a last minute conglomeration of C119s, C124s and C130s, is a case in point.

In contrast to the present situation, picture an Infantry battle group preloaded on gliders at a departure airfield: heavy drop loads have been prepared, supplies lashed, weight and balance computations completed and troops manifested. All that is required for immediate deployment of this battle group is the arrival of tow ships, and the type is immaterial.

The more significant contribution to be made by the glider, however, is in vastly increasing the size of this national asset we call military airlift, within the realm of monetary reason. Of course it would be "nice" to have enough C133 Super-Hercules to move STRAC, but we can't buy "nice."

We can, however, apply a principle to the air that has long been recognized by railroad men and barge men: tow it—it's cheaper.

Tow ships are available today from several sources. Major contributions to a tow fleet could be made by CRAF, the Civil Reserve Air Fleet. CRAF is now composed of some 350 "usable" troop transports out of a potential pool of 2200. The rejects have not been suitable to military airlift because of their configuration, but the configuration of a tow ship is hardly material. The majority of our civilian pool can provide the motive power—the prime movers—for military gliders with the simple addition of a tow mechanism.

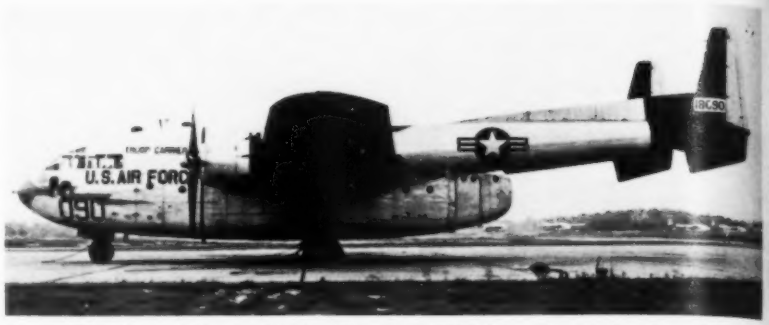
Also, in the military element of our air reserves are 14 wings of out-dated C119 Boxcars which were designed as tactical aircraft but could fulfill a strategic tug role for suitably designed gliders. For example, carrying a significant load *internally*, the C119's usable range is only about 1000 miles, while its maximum range without cargo is over 2200 miles. The increased range results from a greater gasoline load carried by the empty ship. Thus, the empty Boxcar could *tow* the original cargo, or even a greater load, to its maximum range (less some 10 to 15% due to aerodynamic drag of the glider).

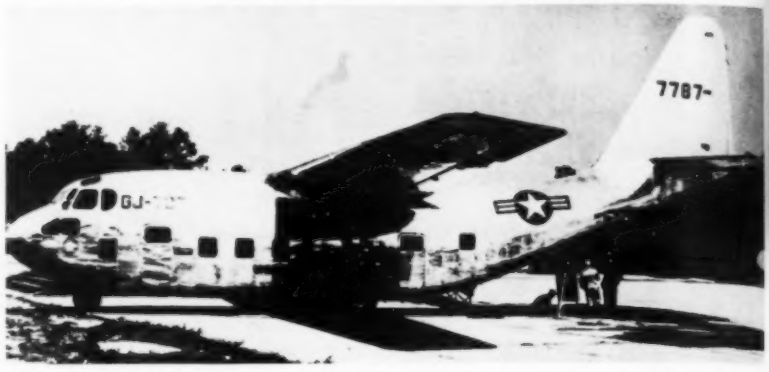
These arguments need not be limited to civil and military reserves, for they are equally applicable to active air units. Like the C119, the C123 Provider's useful range and payload could be increased in a strategic tug role. The C54 and C118A transports, which have no inherent aerial delivery capability, have already demonstrated their ability to tow gliders which do.

A likely prospect as a strategic tug is the KC97. No longer suitable as an aerial tanker since its speed is incompatible with jet bombers, this record setter could double as the "engine" for an aerial train. In this capacity the obsolete tanker would make a material contribution to strategic airlift.

Thus, the glider can cause a manifold increase in the usability of existing aircraft while it also adds to the national arsenal of wings.

Lest the reader be fooled, however, mention should be made of actual glider costs. These aircraft are not inexpensive, but are *relatively* inexpensive when compared to their multi-million-dollar powered counterparts. Drafting board to prototype production of the CG20 originals





The combination of the out-dated, mile-weary C119 (above) and the discarded CG20 (below) can give us the strategic airlift we need.

(the C123 airframe) was slightly over one million dollars per copy; and while quantity production would reduce this figure to a fraction, they would hardly become expendable items. Estimates for volume production indicate that four strategic gliders could be purchased for the price of one strategic transport.

Although my purpose in this discussion is simply to defend an item of war machinery which has been shelved, mention should be made of the glider's relationship to the services.

The Department of Defense roles and missions directives specify no limitation on powerless aircraft, of any weight. Conceivably, then, the Army could initiate its own glider program. The twin-engine Caribou, now being procured by the Army in quantity and a potential tactical-range tow plane, could insure the Army's investment in such a program. Of course, the strategic tug role would depend upon USAF and CRAF equipment.

The Army's clamor for more strategic airlift has resulted in the formation of a Special House Armed Services Subcommittee to study the problem of "National Military Airlift." We of the Army have stated the problem. It is now required of us to suggest a solution. Perhaps gliders are the answer.

At least one thing is clear: Until we sharpen our sword of deterrence with a realistic airlift capability, it will remain sheathed—and incapable of fully effective use.

Publication of this material does not imply DA or USAIS indorsement of factual accuracy or opinion.

CAPT LARRY S. MICKEL is a graduate of the United States Military Academy and holds an M.S. degree in Aeronautical Engineering from Georgia Tech. After attending the Airborne Course, he became a platoon leader in the 11th Airborne Division and, in Korea, a platoon leader and company commander with the 27th Infantry. In 1955 he was aide-de-camp to the Commanding General of I Corps, and later served as G2 for air and assistant secretary of the general staff with the XVIII Airborne Corps. Captain Mickel was formerly a member of the Air Mobility Group of the Airborne-Air Mobility Department, USAIS. He graduated from the Infantry Officer Advanced Course last month.

Front row, left to right: P. J. Holland, H. A. Phillips, J. W. Stilwell, E. M. Crowley, E. D. Post, J. D. Ruppert, N. N. Loscuito, H. T. Eubanks, A. J. Dean, R. N. McInerney, R. W. Cato, H. F. Drewes, J. N. Taylor, P. W. Mandry, R. W. Healy, M. E. Wade, C. P. Ostott, J. A. Berry, M. D. Mierau, H. F. Faery, G. P. McQuillen, R. K. Boyd, H. C. Calvin, H. L. Ash, R. E. Montgomery, J. J. Schneider, R. L. Cox, H. A. Carron, M. D. Darling, F. D. Finn. *Second row:* R. S. Daum, Q. R. Thompson, L. M. Williams, W. H. Adams, D. J. Donahue, A. L. Bloch, J. M. White, F. H. Griffith, M. Lowry, A. Sutton, J. E. Elder, J. H. Johnson, J. B. Oerding, W. H. Willoughby, J. G. Hoass, J. F. Geiger, C. G. Belan, R. H. Ammerman, R. Edelstein, J. E. Fortier, A. E. Johnson, M. P. Lowrey, E. W. Crum, T. F. Schatzman, O. G. Everbach, R. P. Anderson, W. S. Carpenter. *Third row:* R. E. Burns, J. L. Davis, J. A. Booker, M. F. Field, W. L. Johnson, A. H. Blackstone, H. B. Mowery, C. R. Neely, F. A. Johnson, J. G. Coombs, W. E. Florence, B. L. Owens, R. T. Hackett, J. V. Nix, N. J. Wiley, R. J. Campbell, J. T. O'Connell, T. F. Eynon, S. P. Waldrop, J. C. Reid, G. S. Livingston, L. C. Duryea, D. F. Byrnes, H. A. Brownfield. *Fourth row:* J. H. Janszen, W. I. Scudder, T. E. Kopp, T. J. Donahue, G. N. Giacoppe, G. G. Epley, J. P. Sherden, A. Coose, J. T. Caraballo, E. D. Griffith, L. P. Mason, M. A. Hidalgo, J. S. Gibbs, J. A. Dougalas, T. J. Bara, T. A. Koentop, D. A. Darling, A. M. Giese, W. A. Meder, D. L. Hodge, D. L. O'Leary, D. H. Barrell, R. K. Mercado, R. G. Seymour, E. W. Eubanks. *Fifth row:* O. O. Caldwell, W. T. Sexton, J. E. Sugdinis, J. F. Schwoob, K. P. Hesford, R. E. Walter, T. S. Danielson, D. C. Chapman, T. B. Throckmorton, J. Z. Miller, R. D. Marcinkowski, T. H. Taylor, M. A. Jezior, J. A. Pellicci, J. P. Yeagley, C. G. Gigicos, J. V. Arnold. *Sixth row:* C. E. Sturgeon, F. J. Thompson, F. U. Schroeder, P. L. Blake, J. M. Lenti, J. F. Shelby, R. J. Campbell, A. K. Richeson, W. W. Sartoris, A. W. Brennan, C. A. Hagan, B. F. Evans, M. L. Ferguson, R. W. Burnell. *Seventh row:* S. D. Covell, L. F. King, J. T. Downey, C. R. Schrankel, J. P. Kane, D. H. Stem, C. R. Baker, W. S. Martin.

The Infantry School extends its congratulations to the First Classmen of the United States Military Academy who have chosen Infantry as their career branch.

FOR PEOPLE IN A HURRY

Following are extracts from *Combat Lessons* (World War II Combat Reports) and *Combat Report from Korea*. They are brief, pertinent and worthwhile to Infantrymen.

Weapons squad leader: "When fighting in towns, we often emplaced machineguns on ground floors to deliver grazing fire and placed them well back from openings in order to hide the flash and muzzle blast. We also put chicken wire over the windows to stop grenades."

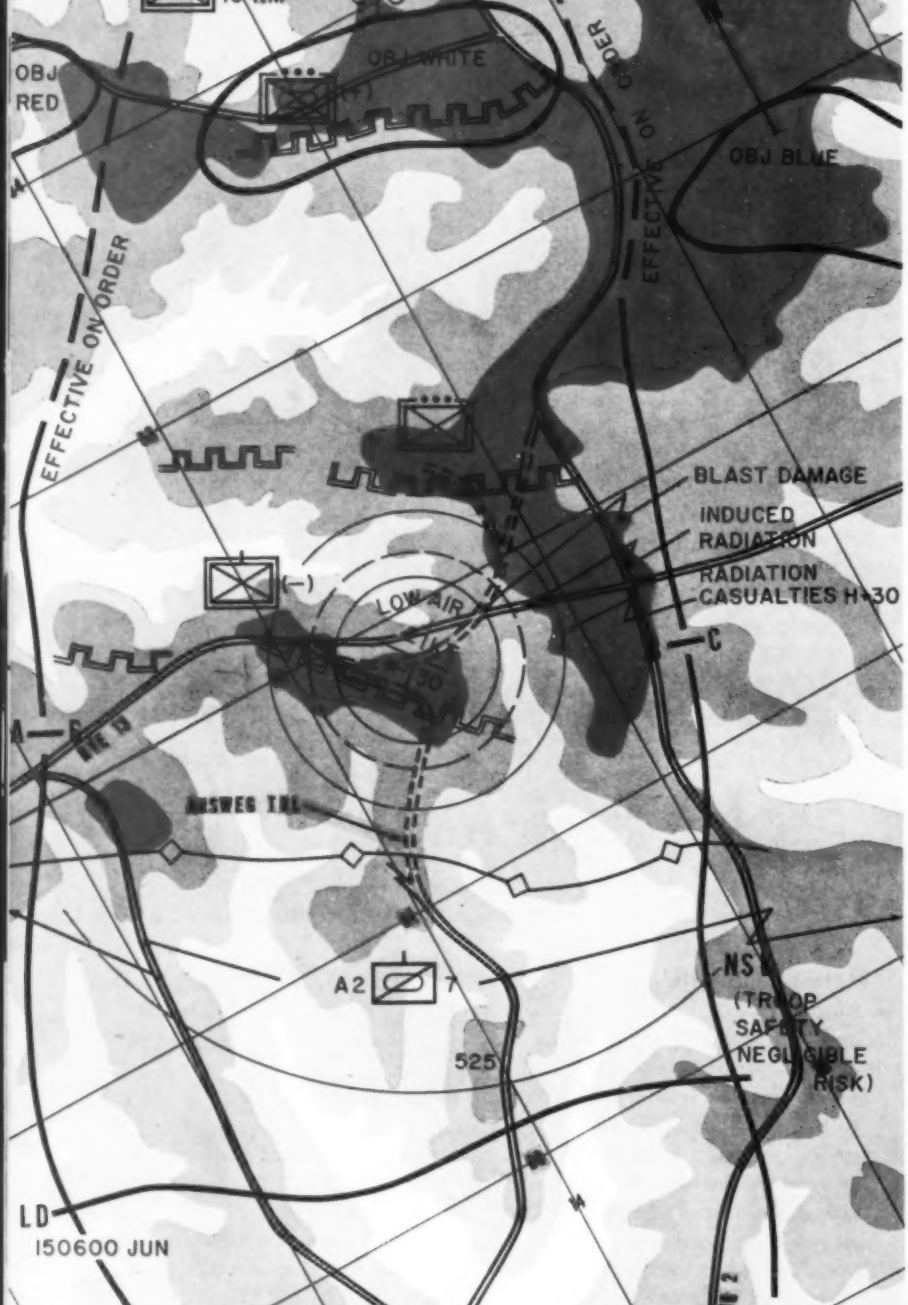
Mortar section leader: ". . . I have taught my men to think in terms of what happens after we've taken the objective. Watch for an enemy counterattack . . . look for possible routes of approach, and alert your gunners to these before the objective is ever taken. . . ."

Rocket launcher gunner: "When supporting artillery fire lifted, our rocket launchers were used to give the impression of continuing artillery fire. This enabled the Infantrymen to move close to the enemy positions without receiving small arms fire."

BRAVO ATTACKS

by Capt Rolfe G. Arnhym

YOU LED BRAVO AT HILL 497. NOW, HERE IS YOUR ATTACK ORDER.



As you sit in front of the battle group situation map, you find your head nodding . . . and your eyes smarting. The cigarette smoke is thick enough to be cut with a knife . . . and since you didn't get much sleep with all of the shelling last night, your mind wanders—as the S2 drones on about the enemy.

Good Lord, you tell yourself, why doesn't he cut this short?

Then it comes—

The old man stands up. "That's it, gentlemen. Are there any questions?"

You are tempted to ask why it takes two and a half hours for an attack briefing . . . but you decide that the fresh air outside is more important. With the others, you salute and start for the door.

Bill Cooley, Charlie Company Commander, nudges you on the way out, "You'd think that the 1st Battle Group 87th Infantry had never made an attack before, eh, George?"

"Not many against a well organized position, and none with nuclear weapon support . . . I guess the old man just wants to make sure we've tied all the loose ends together."

This was your answer and it made sense. After what the S2 and S3 had given you (and considering the size of the attack order), it was evident that there were indeed a lot of loose ends to be tied together . . . and (you tell yourself) . . . as the Bravo Company Commander you are going to be doing a lot of the tying.

It is clear that the old man has handed you a hot one this time. And as you climb in your jeep to begin

your reconnaissance, you glance at your order and reflect for a moment on your part in the Battle Group mission: "1st BG, 87th Infantry attacks 0600 (tomorrow) with Companies A, B and C to seize Objectives Red, White and Blue (Map A); be prepared to continue the attack to the north on order. Main attack to be made by Company B. One nuclear weapon will be fired on Hill 581 (Grid 1481) at H-30 minutes. A 15-minute non-nuclear artillery and mortar preparation will be fired on Objectives Red, White and Blue commencing at H-15 minutes. Priority of fires to Company B."

This is the mission—short and sweet—or maybe not so sweet. . . .

You are particularly glad about that last part—the priority of fires—because you figure that you'll need them. If the enemy picture is anything close to what the S2 painted, Bravo Company will need all the help it can get. Apparently the enemy has been preparing these positions for several days, and the indications are that he will defend them with vigor.

What is worse, aerial recon has shown a vast number of enemy trenches and foxholes throughout the BG zone of operations. There is also an indication that work is commencing on a bunker system. And even though many of these positions appear to be lightly held now, there is no guarantee (according to the S2) that the enemy might not occupy them using the reserves presently located 10 kilometers to the north.

As your jeep rolls along toward the front, you notice just off the road that a few of the attached tanks are refueling for tomorrow's operation—and you are reminded that they will probably be a big help in Bravo's attack in the morning. You are also reminded that the enemy has prepared extensive antitank obstacles forward of his main position (Map A). This, of course, will influence your plan for the attack.

You glance at your watch and notice the time—1540. This should give you about three hours of daylight in which to finish your reconnaissance and put all of the pieces in the attack puzzle together. The sight of the tanks reminds you of the attachments Bravo will have in seizing Objective White. Besides an attached platoon of tanks, you will have a squad of APCs (nine carriers), two assault weapon (SS10) squads and one short-range radar team. In addition, Company B can count on assistance in breaching the antitank obstacle from the engineer company in direct support of the battle group. This engineer unit can also assist in the event that tree blow-down unexpectedly delays the advance of mechanized elements.

As you look down at your overlay, you recall that you will also get some assistance initially in the attack from Troop A, 2d Reconnaissance Squadron, 7th Cavalry, which is securing the LD until H-hour. Your glance at the overlay also brings to mind the fact that the attacking rifle companies have been given zones of action, thereby indicating that they are free to maneuver anywhere within their zones. Fortunately, the old man had not assigned "zones to be cleared," and this, of course, gives the companies the desired freedom of movement necessary for early seizure of assigned objectives.

It's a good thing that you have this freedom of maneuver—for judging from man-made obstacles and the terrain in your zone, it will probably be a pretty wild game of checkers before the whole affair is over.

From your study of the map it is evident that terrain will play no small part in where you attack—and how. There are three good avenues of approach into the initial enemy position. All three follow a ridge line and have a road; however, the right avenue of approach carries all the way into Objective White. The cover in the area is good (there are a lot of folds in the ground), and much concealment is provided by the pine scrub and trees growing in the area. The enemy will have dominant observation—at least initially—from the high ground astride Route 13. Fields of fire are fair throughout the area.

There appears to be no major obstacle (aside from the antitank obstacles previously mentioned), but we could get some tree blow-down from the nuclear shot. Trafficability looks to be good throughout the area, so you anticipate no real problems on that score. As a good combat leader, you decide that all of these accidents of terrain will have to be made to work in your favor.

The few drops of rain on the jeep hood interrupt your train of thought and remind you that there's another problem for you to consider—the weather. Supposing it continues to rain? How will this affect the foot mobility and vehicular mobility in your attack plan?

As you light a cigarette to mull over that possibility, another thought crosses your mind: how will the weather and terrain affect the use of the nuclear weapon? You recall from the S3's briefing that a 2 KT weapon will be employed in B Company's zone at H-30 minutes. The time—H-30—was selected to obtain maximum casualties and still provide for troop safety.

You recall, too, that the attacking echelon will not begin the breaching of the antitank obstacle until after H-hour and may thus take advantage of enemy casualties produced by the radiation effects of the nuclear weapon. In addition, time will be available to make the required post-strike damage assessment and to make any necessary adjustment in plans prior to crossing the LD.

It all seems to make sense the way the BG Commander has decided to employ a low air burst weapon which will accomplish maximum destruction and at the same time not overly restrict maneuver of the attacking forces. The weapon employed like this will thus neutralize portions of the enemy's defenses to the extent that they won't offer effective resistance.

As you again look at your map (Map A) you realize that within the inner circle (blast damage) it may be anticipated that foxholes and trenches will suffer severe damage and extensive enemy casualties will occur. The outer circle (Radiation Casualties at H + 30) indicates the enemy casualty radius from radiation one hour after the nuclear shot and 30 minutes after the attack commences. You are also reminded that elements of the 2d Recon screening force will move to the rear of the nuclear safety line (NSL) from H-60 minutes until

The sight of friendly tanks reminds you of the extensive enemy obstacle you will have to breach.

detonation, thereafter re-occupying initial positions.

The thought of the screening force reminds you of the great amount of coordination required in this whole operation. Then your thoughts turn to the platoon leaders who also have a particularly difficult job in store for them. Lt Slavins (1st Plat) is a fireball with good battle experience. MSgt Davis (2d Plat) is steady, tough, capable and battle-tested. Lt Mann (3d Plat), killed in the battle for Hill 497, has been replaced by Lt Carter, a new 2d Lt; he is an OCS graduate and seems to know his job—and this is his first taste of combat.

Trenches and foxholes are clearly visible on the objective.

All in all, there isn't a weak link in the chain. You have good platoon leaders, the company strength is high (93%) and everyone seems confident and eager to get on with the fight—now it's up to you to provide the plan.

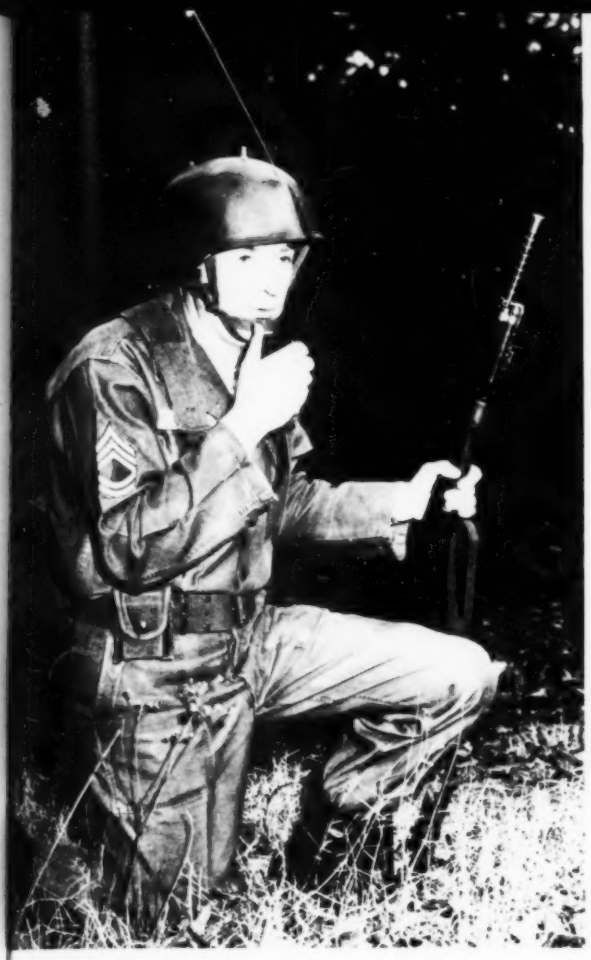
As your jeep draws up to the Battle Group vantage point, you notice the weapons platoon leader (Lt Bates), an artillery forward observer, the heavy mortar FO and your radio operator, all of whom were instructed to meet you here. You can, of course, expect some recommendations from them before you come up with a final plan.

When it's all said and done, however, the plan will be no better than the knowledge and experience which you have put into it. Just as you automatically ran through the considerations of Mission, Enemy, Terrain and Fire Support and Troops Available (METT) in making your mental estimate, so, too, must you now apply these considerations as you come up with a plan to include: concept, missions for organic and attached elements, and the control measures you will use.

When you have done this, your company—Bravo—will be ready to carry out the plan. To see how another commander might have done it (were he in your shoes), turn to page 60.

"You'd think we'd never made an attack before. . . ."

CAPT ROLFE G. ARNHYM is a 1953 graduate of the United States Military Academy. After attending the Basic Infantry Officer Course, he became a company commander in the 145th Infantry Regiment at Camp Polk. He then served as aide-de-camp to the commanding general of the 10th Infantry Division. In 1955 Captain Arnhym became company executive officer and, subsequently, company commander, assistant battle group S3 and battle group S1 with the 87th Infantry in Europe. After attending the Infantry Officer Advanced Course in 1958, he was assigned as an instructor in the USAIS Command and Staff Department. Captain Arnhym's previous contributions to *Infantry* include "Electronic Eyes and Ears" and "The Battle Group Heavy Mortar Platoon."



Wired for Sound

The shouted command will not carry to the far reaches of the nuclear battlefield. Individual radio communication may provide the answer.

by 1st Lt Robert A. Jones

When the artillery lifts, the riflemen plunge forward for the final assault. To these Infantrymen, the journey into "No Man's Land" is a dirty but decisive job . . . for without it, the battle cannot be won.

In the past, this "last hundred yards" has been particularly difficult because the noise and confusion of the assault all but ruled out effective control. Squad and platoon leaders had their voice—and perhaps an arm and hand signal—to aid them in directing the final assault . . . but it wasn't enough.

Today, however, things have taken a turn for the better. We have at last come up with some positive, effective means of controlling small Infantry units in battle.

We have, quite literally, wired everyone for sound.

The answer to the squad and platoon leader's problems (or at least most of them) is the recently developed individual radio. It is this small, almost insignificant item of equipment which should allow Infantry leaders to effectively control their units during the critical periods of combat.

As an observer of the final field test of the individual radio, I have gained a great respect for its capabilities; also, I have a keen regard for its potential on the future battlefield. And since few Infantrymen have seen or used this equipment, I would like to share my impressions of the radio as it operated under field conditions.

First of all, the individual radio has been developed in two models. The AN/PRC-34 has the entire radio mounted in a nonstandard helmet. This version is commonly referred to as the "helmet radio." The AN/PRC-36 is a belt-mounted model with the antenna and earphone mounted on the standard helmet by means of an elastic band. This design is referred to as the "belt radio." In testing, the belt radio was found to be unsatisfactory for normal use by Infantrymen in combat. In view of this, the remainder of this article will deal principally with the AN/PRC-34.

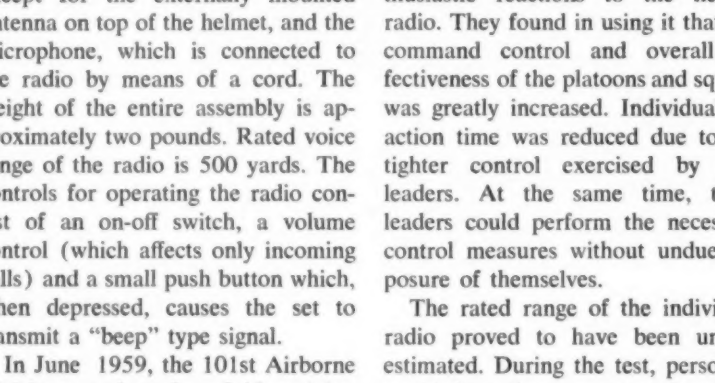
The helmet radio is contained within a special non-standard helmet

The AN/PRC-34 Helmet Radio

except for the externally mounted antenna on top of the helmet, and the microphone, which is connected to the radio by means of a cord. The weight of the entire assembly is approximately two pounds. Rated voice range of the radio is 500 yards. The controls for operating the radio consist of an on-off switch, a volume control (which affects only incoming calls) and a small push button which, when depressed, causes the set to transmit a "beep" type signal.

In June 1959, the 101st Airborne Division conducted a field training exercise during which the final field test of the individual radio was made. The purpose of the test was to determine the radio's capability for use by combat-active soldiers. Users of the radio during the test voiced enthusiastic reactions to the helmet radio. They found in using it that the command control and overall effectiveness of the platoons and squads was greatly increased. Individual reaction time was reduced due to the tighter control exercised by unit leaders. At the same time, these leaders could perform the necessary control measures without undue exposure of themselves.

The rated range of the individual radio proved to have been underestimated. During the test, personnel could depend on a range of at least 500 yards, even in heavy woods and underbrush. In open terrain and rolling country, this range increased to 1000 yards. In some instances (i. e., high ground to high ground), line-of-sight ranges of 1500 yards were not uncommon. Conversely, it was found that, by lowering the antenna, the range of the radio could be reduced by approximately one-half when the longer ranges were not needed. This proved to be a valuable feature when two platoons using the same frequency happened to be operating close to each other. Based upon this, I believe that the individual radio has enough power to blanket the entire area covered by a rifle platoon under normal conditions.



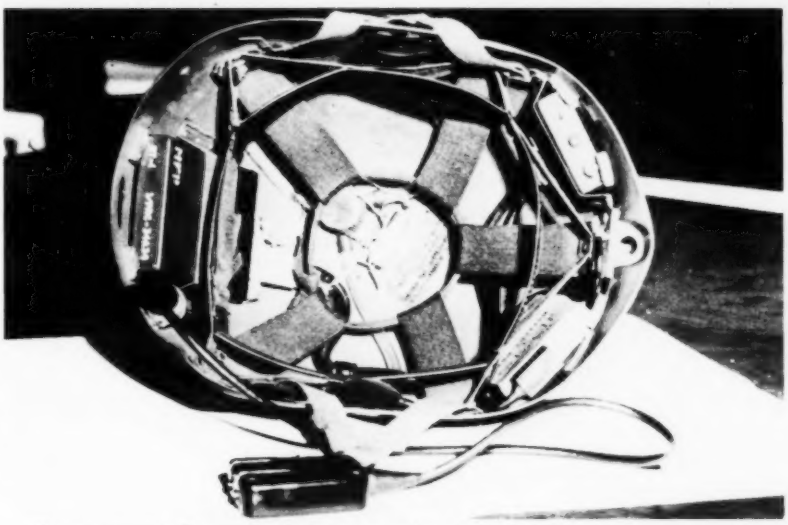
The AN/PRC-36 Belt Radio

The battery used to power the helmet radio proved to be very satisfactory. Battery life was found to be more than adequate, from the resupply standpoint, even under heavy use by platoon leaders. What is equally important, the batteries were found to be small enough to allow the user to carry several spares without worrying about excess weight.

Once the test got underway, the users of the radio found that formal radio telephone procedure was time consuming and, at times, a handicap in transmitting. I observed that, within a platoon-size net, individuals could recognize the voice of anyone transmitting; consequently, modified standard procedure was used. The practice of calling a station, then waiting for the called station to answer before sending the message, was found to be unnecessary because anyone wearing the helmet radio was always monitoring the net. The number of messages which did not get through using this system was very low, and the reason for not receiving the message was often traced to another cause. In this regard, I believe that there is little risk of a security violation using this system of radio procedure on a platoon-size net with such a short-range radio. It is doubtful that any enemy monitoring stations would be close enough to receive the transmissions; even if they were, their reaction time to the message would be too slow to do any good.

As might be expected, some disadvantages of unrestricted conversation appeared during the test. At first the air was full of unnecessary transmission. Everyone equipped with the radio seemed to have something to say. Once the novelty of the radio wore off, this problem straightened itself out.

There were many varied opinions expressed by test personnel regarding the number of radios that should be in a rifle platoon net. Many felt that the number of radios should be reduced so that only the platoon leader, platoon sergeant and squad leaders had them. According to some, giving a fire-team leader a radio on the same net with the platoon leader might tend to eliminate initiative and leadership on the part of the squad leaders. On the other hand, many were of the opinion that every man in the platoon should have a helmet radio. It was felt that, if every man could hear what was going on, the reaction time of the individual would be even quicker and morale would be improved; also, every man would be continually abreast of the situation. In addition, if every man in the platoon had a helmet radio, a ready means of replacement would be at hand in the event that one of the key individual's radios became inoperative. Some personnel expressed the opinion that only key individuals in the platoon should have the receiver-transmitter, while everyone else in the platoon should have only a receiver mounted in the standard helmet. Still others thought that every man should have the non-standard helmet. Their reasoning was that wearers of the non-standard helmet stood out from those wearing the standard helmet, thereby making it easier for an enemy sniper to pinpoint the leaders.



The components fit snugly within the interior of the helmet and may be readily inspected and maintained.

It was interesting to note that the majority of personnel undergoing the test who were asked were of the opinion that the ideal platoon net was the one *they* were using. It should be noted at this point that no decision has been made as to whether the helmet radio will be a platoon or squad radio. What is significant is that, wherever it is used, the radio will increase the Infantry's operating capabilities.

The other version of the individual radio, the AN/PRC-36 belt-mounted radio did not prove as satisfactory for the Infantry soldier actively engaged in combat as did the helmet radio. The most pronounced complaint was the way the radio was carried. The users could find no practical place to carry it; no matter where they put the set on their belt, if they had to hit the dirt or roll on the ground, they were subject to either a bruised hip or a broken radio.

As with any new piece of equipment, no matter how good, there are always improvements that can be made. The helmet radio is no exception. As a result of the troop test, many modifications and alterations have been recommended to the Army Signal Corps, and these will undoubtedly improve the AN/PRC-34 for Infantry use.

Even in its present state, the helmet radio is a tremendous improvement over what our platoon leaders have had in the past. And consider what its capability will be after it has been modified for even better performance!

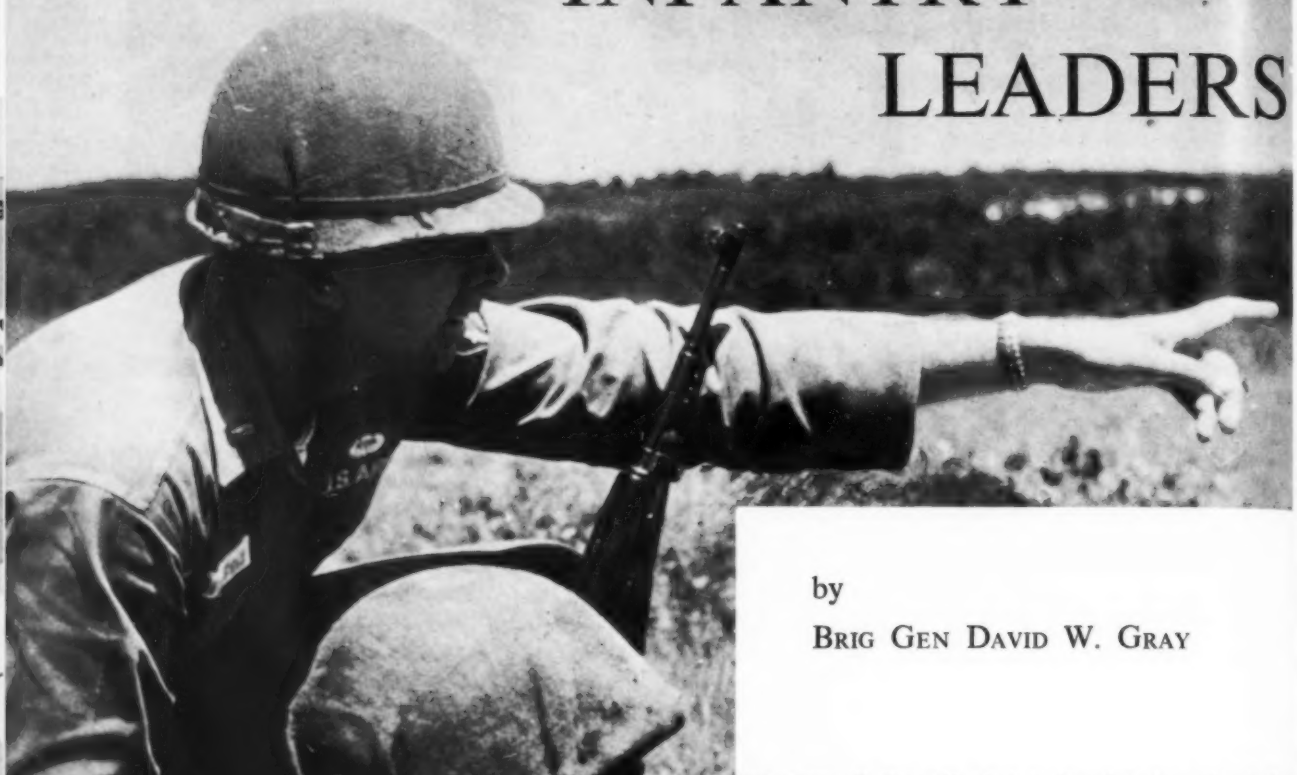
There is little doubt that when key individuals in the rifle platoon (or the squad) become "wired for sound," the unit will work together more effectively. However, there is one ominous disadvantage that will accrue when helmet radios are issued to Infantry units . . . and for this I have no solution . . . The GI will have lost forever his old reliable steel cooking pot, bathtub and sockwasher.

Anyway, this is progress.

First Lieutenant Robert A. Jones was commissioned upon graduating from the Agricultural and Mechanical College of Texas in May 1955. He completed both the Basic Infantry Officer Course and the Ranger Course at Fort Benning in 1956. Lieutenant Jones has since served with the 5th Cavalry Regiment, 1st Cavalry Division, in Japan and has attended the Infantry Officers Communication Course at Fort Benning. Presently, he is an instructor with the Attack Committee, Ranger Department, USAIS.

The opinions expressed in this article are those of the author and do not necessarily reflect thinking of the United States Army Infantry School.

TRAINING INFANTRY LEADERS



by

BRIG GEN DAVID W. GRAY

WITH all the talk that is heard today of missiles, atomics and outer space, I often wonder what thoughts must cross the mind of a young second lieutenant of Infantry as he prepares for his first instruction of his platoon in Infantry tactics. What role does he have on the modern battlefield? How can he ever train his men to fight in the awesome atmosphere of wars to come?

In the past three years, I have served as the assistant division commander in three Infantry divisions and have, therefore, had the opportunity to observe countless of these young lieutenants training their platoons. I am convinced that much more can be done to assist them than has been done. Having never commanded a platoon in combat, I am not sure I am the best qualified to discuss this subject, but I hope at least that my ideas will be sufficiently thought provoking to stimulate others, better qualified than I, to express themselves.

INFANTRY IS AN INEXACT SCIENCE

I believe part of the difficulty in training our junior leaders stems from the fact that we have been prone to treat Infantry tactics as a more or less exact science. Up to World War I, such a classification of Infantry combat at its lowest level was probably proper. Troops wheeled and marched, fired and charged or retired

The cold, technical terms of the field manual cannot impart battlefield atmosphere . . . yet, we *can* give our young leaders a clear picture of what to expect. . . .

in accordance with commands; and the junior officer had no other mission than to repeat these commands, then supervise their execution. His greatest influence on the battle was to set an example of courage to his men, inspiring them to victory, steadying them in defeat. To accomplish this, the junior officer required little else than a knowledge of the drill, a loud voice and a stout heart. In World War I, however, the ability to shift and concentrate artillery fire and the advent of the machinegun and the tank changed all that. The solid masses which had endured for at least 2000 years were forced to go; Infantry was forced to spread out and, in consequence, Infantry small unit tactics changed almost overnight from an exact to a very inexact, unpredictable science. Suddenly the platoon leader was no longer marching shoulder to shoulder with an entire regiment or brigade, wheeling when told to wheel, firing when told to fire at an enemy similarly deployed and engaged.

He found himself assigned an area all his own within which to fight, and facing him was not a known foe in visible, closely packed ranks, but a whole assortment of unknowns including riflemen, automatic weapons, mines, obstacles, tanks, artillery and perhaps aircraft, most of which were never visible to him.

Under such conditions, war takes on a new complexion. No two situations are ever quite alike and the solutions are also never quite the same. Except for his initial orders and subsequent fragmentary orders, the platoon leader is on his own and must make many on-the-spot decisions, reacting quickly to the ever-changing situation which unfolds before him. Thus, the science of minor tactics no longer follows exact rules and procedures, but follows very inexact ones wherein the results are seldom predictable and execution is never the same. This is the basis for my earlier statement that modern Infantry tactics, at the platoon level at least, have become a very inexact science.

MODERN TACTICS AND METHODS OF TEACHING

One may wonder why I have appeared to belabor a point which should be perfectly obvious to all soldiers whether they have ever heard a bullet crash over their heads or not. I have done it because I do not believe that our methods of teaching small unit Infantry tactics have kept pace with the changes that have taken place. Mind, I say methods and not the theory itself, with which I find no fault.

To illustrate this point, I have in my personal library a US Army Manual published after the Civil War. It measures about 3 inches by 4 inches and is perhaps 1 inch thick. It contains all the evolutions of drill which were the same on the parade ground as well as the battlefield. It tells how to load and fire the rifle and how to perform the manual of arms. Today, faced with a vastly more complex situation, our junior leader finds all his instructional material contained in relatively few manuals of about the same 3-inch by 4-inch size. To be more explicit, most of his guidance for actual combat is contained in two manuals: FM 21-75, *Combat Training of the Individual Soldier and Patrolling,* and FM 7-10, *Rifle Company, Infantry and Airborne Division Battle Groups.*

What we have done is to assume that we could take the same simple set of parade ground rules, alter them to adapt to a more open formation and expect them to suffice. We failed to recognize that the revolution in tactics which has taken place also called for a revaluation of our methods of teaching.

WHAT SHOULD MODERN COMBAT TEACHING BE?

If the above is so, what changes should be made? I would say that the tactical instruction of the young lieutenant should properly be divided into three parts, namely:

Drill
Tactics and Environment
Techniques

The first of these, *Drill,* would be little different than that we now teach. As loose as the modern battlefield has become, it is still essential to have formations, commands and signals, and to practice them. Each individual must still learn to respond automatically to the will of his leader and this can best be instilled by drill. Likewise, the leader must still have simple, effective means of controlling the actions of his men; and for this, he must still use formations and commands, both verbal and visual.

In the second part of his instruction, *Tactics and Environment,* I believe we need a somewhat new approach. At present, we walk our young lieutenant through a stylized version of various types of actions such as a day-and-night attack of an objective, advance guard, raids, patrols, delay, withdrawal and defense. We then give him a few exercises, both on the map and on the terrain, chiefly to test his troop leading procedures. All this is necessary and good; but, to this I would add another element. What the junior officer lacks at this time is knowledge of what the battlefield is like. The coldly technical terms of the field manual will not give him this. What is needed here is atmosphere—battlefield atmosphere—which will help him visualize the myriad, unexpected difficulties he will encounter and the uncertainty that will hang as a pall over every moment of the day. Of course, he will never fully appreciate this until the actuality is upon him, but we can help him prepare for it. This, I would help him do by requiring the study of specially prepared texts—case histories based on actual experiences of junior leaders in combat in a variety of situations. What I

am proposing here is nothing new. After World War I, the need for such study was recognized and from this need was written the world-famed book, *Infantry in Battle*, which posed a series of situations which occurred in World War I, gave the actual battlefield solutions and then analyzed the solutions as to their strengths and weaknesses.

Strangely enough, while I was a student at the Infantry School this book was not used as a text and was not even a subject of required reading.

Added to this there should be certain books which should be required reading and which should be used as the basis for classroom seminars in various aspects of modern war. My own nominations for this list would be those contained in Figure 1.

There are unquestionably other and better books that could be included. It should be noted that there are included no books by higher commanders. Not that these are not worthwhile reading. They are. It is simply that we are concerned here solely with Infantry tactics of the smaller unit. I have, therefore, included only those books that would help the young officer get the feel of the battlefield, the uncertainties of terrain, weather, communications and supply, and the effect of fear, hunger and fatigue on the capabilities of his troops. No matter how the next war is fought, these particular conditions will still exist and to this extent the young officer can profit by reaching into the past.

All of this is preliminary to what I consider the really vital part of a junior officer's education—the *Techniques*. I have stated earlier that Infantry tactics is an inexact science. Actually, it is more a mixture of exact and inexact. Weapons themselves follow predictable laws and are, therefore, akin to an exact science such as mathematics. Human behavior is, on the other hand, not always predictable and is, therefore, an inexact science. This mixture compounds our problem and makes the study and execution of minor Infantry tactics even more complex.

1. *US Army in World War II, Three Battles: Arnaville, Altuzza and Schmidt*, a Department of the Army publication. An account of three battles from division down to the front rank squad. Based on interviews of participants, this is unquestionably the best factual account of battle to emerge from World War II. It is particularly valuable since the three battles are of different types: Arnaville, a river crossing; Altuzza, mountain fighting in Italy; and Schmidt, an Infantry and tank battle in typical terrain of Western Europe under adverse conditions of weather replete with lessons for commanders of every rank. The book's greatest value lies in showing what an over-riding part the human element plays in war.
2. *Anzio Beachhead (22 Jan – 25 May '44)*, a Department of the Army publication. Still a different type of fighting, an amphibious landing and a beachhead battle of extreme ferocity. A good atmosphere builder for the young officer.
3. *Company Commander*, Charles B. MacDonald, Infantry Journal Press, Washington, D. C. A factual account of battle at the company commander level.
4. *Tank-Fighter Team*, Lt Robert M. Gerard, Infantry Journal Press, Washington, D. C. An account of the actions of a small, mechanized, French composite force of Infantry, tanks and antitank guns that operated very successfully against the Germans when they invaded France. It has value in describing the uncertainties of a massive meeting engagement and the action of highly mobile, small mechanized forces in a delaying action.
5. *Psychology and the Soldier*, Norman Copeland, Military Service Publishing Company, Harrisburg, Pennsylvania. Written at a level that a young officer can comprehend. Especially valuable for its discussion of the psychological basis of military discipline.
6. *Green Beret — Red Star*, Anthony Crockett, Eyre and Spottiswoode, Ltd., London. One of several good books written by the British on jungle fighting in Burma and Malaya. Valuable insight into patrol actions against guerrillas and an object lesson in the need to adapt normal procedures to a radically changed situation.
7. *Sinai Victory*, S. L. A. Marshall, William Morrow and Co., New York. Still a different type of operation—desert warfare. Written at the level of battalion or brigade commander and below. Valuable as an example of what a modern small war can be like.
8. *After Action Studies of the 7th Division in the Central Pacific*, S. L. A. Marshall, The Infantry Journal. Not an accurate title—published after the war. Written up a few days after a battle for one of the islands. Its tremendous value to the junior leader lies in showing him just what happens to each individual in his platoon during a battle. Particularly of interest is how little each soldier really knows of what was going on around him.

Figure 1. A list of books which describe various aspects of modern war.

Inexact sciences are taught not merely by the statement of a few rules or principles but by the development and discussion of these rules and principles in great detail so that the student understands the hypothesis on which they are based and the many subtle variations which exist in their interpretation and application. So we must do with tactics. We must take each principle, break it down into its essential elements and discuss these in great detail. We must analyze carefully the interplay of terrain, weather, weapons, the enemy and human behavior in every conceivable situation. We must supplement our basic manuals with a series of texts which would form the firm basis for the continued development of our junior leader. The study of these texts would develop in the junior officer a vast inquisitiveness—an ability to react to specific situations with a solution tailored to the situation rather than with a set piece carried out in accordance with a specific ritual. These texts would cover a wide span of subjects and would be much too broad for me to discuss in detail here, but I would like to illustrate the style which should be used. On the following page is my concept of the opening paragraphs of Volume 1.

BRIG GEN DAVID W. GRAY received his commission in the Infantry when he was graduated from the United States Military Academy in 1933. During World War II he served with Headquarters, Army Ground Forces, and later with the G3 section of General Walter Krueger's Sixth Army. During the Korean War he was Operations Officer of the Eighth Army, Commanding Officer of the 27th Infantry Regiment and G3 of X Corps. He graduated from the Army War College in 1952 and was later appointed Chief of the Operations Division, ODCSOPS, Department of the Army. In March 1957 he became Assistant Division Commander of the 11th Airborne Division (now the 24th Infantry Division) and later commanded the elements of the 24th in Lebanon in 1958. At present, General Gray is the Chief of Staff, V Corps, in Europe.

VOLUME 1 — PLATOON IN ATTACK

INTRODUCTION

The purpose of this text is to introduce you to the study of the techniques of the Infantryman on the battlefield and then to discuss in detail the techniques of all elements of the platoon in the attack. The objectives of this and subsequent texts of the same series are far different than those of the field manual. A parallel can be drawn with the study of music. One who has learned the scales can hardly be called a musician. Yet this is an essential first step. The novice becomes a musician by reading the score of many compositions and eventually is able to play any piece.

So it is with your chosen profession. The basic field manuals have taught you the principles of fighting, moving and shooting. These additional special texts, by exposing you to all the variations of the principles you have learned, will make you an Infantry leader capable of holding your own on the battlefield against any foe. The most important point for you to remember is that Infantry combat at your level is a very inexact science. Although Infantry action may follow certain patterns, each situation will be slightly different calling for changes not only in tactics but variations in techniques as well. Your ability to apply the correct solution in any given situation is a combination of your knowledge of the basic fundamentals and the application of these techniques tempered always by good common sense.

Unit control is enhanced if movement is at controlled speeds.

FUTURE OF SMALL UNIT INFANTRY COMBAT

One of the first problems you will face in training your platoon is to convince them that there is a future for small unit Infantry combat. They may feel that with the host of new developments that receive so much publicity, there will be no occasion for man to be pitted against man with only the weapons of his squad at his disposal. It is important that you face up to this problem because unless the soldier is convinced that what he is doing is tactically sound and he may be called upon to do it in combat, he will be only half-hearted in his training.

You should have no doubts upon this subject. Whether the war is atomic or nonatomic, the continuing evolutionary trend to disperse and spread will develop more and more chances for small individual actions between squads and platoons to take place. Increased mobility will likewise have the same result. Small mechanized units will be operating in intervals and on the flanks, while small airborne units may be operating in the rear. Guerrilla activities also always bring an increase in small unit actions.

The so-called small wars also must be considered. In such wars the fighting may be in mountains, deserts, or jungles where the nature of the terrain itself will force combat by small units and where normally the more exotic weapons, like atomics and missiles, would probably not be employed. You can truthfully tell your platoon that, far from being obsolescent as a basic fighting unit, there is even a greater probability that combat will be characterized by a series of small engagements in many of which platoons and even squads may be operating separately.

If still further convincing is needed, you may point out to your platoon that in the Korean War during the year 1952, nearly all the fighting was at small unit level. Although the lines remained relatively stationary throughout the year, every night literally hundreds of small Infantry units roamed the no man's land between the lines. During this period, the science of night patrolling, raids and ambushes was brought almost to the stage of an art, and for the men engaged in it, this combat was no less deadly than if whole regiments had attacked. The Korean War was a special war some may say. This is true, but all wars are so, and each one is more special than the last.

MOBILITY OF THE INDIVIDUAL SOLDIER

Throughout the history of war, one of the fundamental considerations of a commander has been mobility. It has been stated as such in every treatise on war that has been written. In applying this consideration, it is particularly important that we understand its meaning. In the minds of many, mobility has become confused with speed. This is wrong. Speed alone does not indicate mobility. Mobility on the battlefield, properly defined, is the ability to move a soldier to a given point with the necessary equipment and in the physical condition required to accomplish his mission. Depending on the situation and the mission, this could require a mobility rate varying from one mile an hour on foot over rough terrain with heavy loads to 500 miles per hour in the fastest means of air transport we have. Right now, however, we are interested in the movement of the soldier on foot on the battlefield.

It has been common practice for many young officers to teach that movement forward is always accomplished at a dead run. This practice may be influenced by the belief that if not required to run hard, many soldiers in training will not run at all and there is considerable basis for this belief. But is there really a requirement to always move all-out at all times? The field manual does not say so. It may be implied in the manual by the general term used for forward movement, which is a "rush." It may also be implied from this statement in the field manual: "Run to the new position, using the shortest route," but it is not categorically stated as a requirement and logically should not be for two reasons: First, it is a well established fact that short bursts of speed will expend energy at a very fast rate; and it is important for the Infantry fighter to arrive on the objective with enough strength left to fight his way through it. But most important is the problem of the Infantryman going where he is supposed to go. The field manual enjoins him to select his new location before starting, but more often than not the accident of the terrain will not permit this. Therefore, he will have to pick his new location as he runs. This he can do much better if he is running at a controlled speed rather than in an all-out effort. Another consideration is the fact that, more often than not, the Infantry fighter will move as part of a group. In so doing he must maintain his interval and his direction, and also be responsive to orders issued by his leader. This he can do much better if running at a controlled speed. The next question, naturally, is what constitutes controlled speed. Many say that this lies in the area between half and three-quarters speed, depending on the terrain, the load the Infantryman may be carrying and the amount and accuracy of fire he may be receiving. It naturally goes without saying that in this latter instance, if the enemy's fire is right on him, his speed will probably exceed any that he had heretofore achieved. As a guide in training, it is desirable to teach the soldier to move from one-half to three-quarters speed.

We must find a way to impart a foretaste of combat to our leaders, whether they first face it from the bow of a landing craft or while standing in the jump door.

With this as a beginning, this text would continue to analyze and discuss each minute element of the Infantry platoon in the attack. A partial list of the additional subjects I would include are shown below.

1. Effect of various types of terrain on the rate and method of movement, i.e., rough or mountainous terrain, desert sand, jungle, open or dense forest, etc.
2. Fire of the individual soldier.
3. Control of fire team leaders.
4. Formations.
5. Close combat as distinguished from open combat.
6. Independent squad and platoon action as distinguished from fighting as part of a larger force.
7. Training techniquest to stimulate battlefield conditions.
8. Fighting inside an objective.
9. Effects and characteristics of hostile fire on an attacking force.
10. Situations, discussions and solutions.

After study of such a text, I do not doubt that a junior leader would have a much better concept of his role and be able to do a better job of training his platoon. It may be argued that this method might lead to complete unconventionality and the violation of basic principles. No doubt the danger is there. However, it must be remembered that the goal is not to violate the principles but to encourage variation in their application, i.e., fit the technique to the situation. In any event, is the alternative not more disastrous? That alternative, of course, is the blind application of set drills to each situation without regard to the realities confronting the leader.

Infantry is an inexact science and does not follow exact rules and procedures.

PREPARATION OF TEXTS

It may be asked how these special texts will be prepared. This would be a literary effort of no mean magnitude, it is true. The Infantry School at Fort Benning would have to play a major role, but I do not believe that even the considerable resources of Fort Benning would, in themselves, suffice. An undertaking such as this should draw on the experience of all those who have a personal knowledge in war, whether now active in the service or not.

I visualize that this task could be approached as follows: The Infantry School would develop in outline form the topics that were to be covered in any specific text. These would be comparable in scope to those indicated above by me for the text on

Techniques of the Platoon in the Attack. Comments and suggestions on these topics could then be solicited in the following manner:

- By publication in the *Infantry* magazine.
- By direct solicitation from individuals known to have experience in specific fields.
- By requirements placed on students at other service schools.
- By circularization to Reserve and National Guard units to use as discussion topics for submission of comments.
- By assembly and review of data already written and published.
- Interviews by special teams.

After topical data had been assembled, the task of analyzing, writing, and editing would be undertaken. This would not be written in the more or less dogmatic style of the field manuals but more in the style used by me to illustrate the opening paragraphs of *Platoon in the Attack*. Also, this task would be simplified since I do not visualize that these texts would necessarily have to be completely reviewed up through CONARC and through DA. In many instances where there is a difference of opinion between contributors, both sides can be presented. Remember, the object is to expose the reader to ideas, to stimulate his thinking and help him to distinguish the situation where one set of techniques will apply as compared to another situation in which entirely contrary techniques may be required. The entire emphasis in these texts would be based on the variations rather than on the establishment of rules as is the general case in field manuals.

I must frankly admit I do not know whether the above scheme would work. It would depend entirely on whether there are enough Infantrymen around who have the time and inclination to lend a hand. It is entirely true that the demands of the modern world do not leave much time for calm reflection and the crystallization of thought. It may be that someone else can think of a better scheme to tap the large reservoir of experience that is fast dwindling away. If so, I hope I have helped provoke them into writing about it, which, as I stated in the beginning, was part of my intent.

The personal lessons learned on the battlefield must be imparted to our young leaders.

In essence, then, this is the method I would use in training Infantry leaders: I would first teach our young officer the fundamentals of his trade as stated in the field manual. Coincident with this instruction, I would give him collateral reading and instruction designed to condition his mind to the conditions and environment of the battlefield so that he can logically reason the techniques he must apply in each situation. I would then introduce him through a series of special texts to the study of Infantry in combat—a study that would continue throughout his career, a study of the techniques of Infantry as an inexact science, which it unquestionably is.

In my own mind, the approach I have attempted to explain is evolutionary and inevitable. Right now, nearly all of our combat leaders have passed into field grade and the young officer no longer has the intimate contact of experienced leaders to give him close supervision either in training or any actual combat that might now occur.

But apart from this consideration, the modern machines of war are forcing a greater premium on the knowledge, training and expertness of the individual. Once trained, these skilled Infantrymen must not be dissipated by the mistakes of leaders whose faults are not those of courage or intelligence, but an inability to visualize the conditions under which they must fight. By the time these young men might learn this, it may be too late; both they and the men under them may be lost forever.

Of course, there are certain elements that only the first crash of real war will resolve, but this will hold for both sides. Our mission is to ensure that our young leader enters his first mortal combat imbued with confidence, a confidence that can only come from a profound study of his role and the knowledge that, short of actual war, he has mastered this inexact science to the degree that it is possible of mastery in time of peace.

The opinions expressed in this article are those of the author and do not necessarily reflect thinking of the United States Army Infantry School.

INFANTRY AROUND THE WORLD

GERMANY

1st Battle Group, 15th Infantry, 3d Infantry Division

VERA CRUZ, Chapultepec, Mexico City, Shiloh, New Mexico, Cuba, China, the Philippines, North Africa, Germany, Korea. These and other names on the 15th Infantry's 32 battle streamers unfold a tradition of heroism attested by 20 Medals of Honor and thousands of lesser decorations that span more than 159 years of service to the country. This is the "Can-Do" Battle Group, and today it continues to live up to its motto.

The 15th is one of five battle groups of the 3d Infantry Division which is assigned to V US Army Corps of the Seventh US Army.

Presently stationed at Bamberg, Germany, the 15th is an integral part of the NATO Defense Forces and as such maintains its combat ready posture with a rigorous year-round training schedule.

Recent activities of the Battle Group have been varied but are typical of units stationed in Germany.

In July 1959, the Battle Group conducted an extensive river crossing operation across the Main River supported by Seventh Army and Air Force units. In September 1959, approximately 800 enlisted members of the Battle Group returned to the United States for separation from the service. These individuals, in turn, were replaced by men trained at Fort Benning, Georgia. After arrival of the replacements, the Battle Group undertook an accelerated and progressive training program. The phases of this training included realistic squad training and tests, platoon training and tests administered by the Battle Group, and company training with tests administered by a team from 3d Infantry Division Headquarters.

Although training is the most important mission, it is not the only activity of the unit. Many members of the 15th participate actively with the German civilian community in furthering German-American activities. Included are sports events, membership in the International Club, joint shoots, and rod and gun activities. Additionally, members of the Battle Group have easy access to many well known recreational areas, including Garmisch and Berchtesgaden.

Intramural athletics and battle group and post sports teams provide an opportunity for individual participation as well as spectator interest. The Bamberg football team was the USAREUR champion two years ago and also was the division champion last season. Last year, the baseball team was the league champion. The Battle Group has participated in numerous marksmanship competitions, and, on two occasions during 1959, won the Seventh US Army small bore competition.

Thus, the 15th is typical of the battle groups found in Europe—combat ready, trained under rigorous conditions and tested by a continuing system of alerts and alert rehearsals. The duty is challenging, varied and interesting—and the men who won the 15th its fame can be assured that the old regimental motto still applies —"Can Do."

The Battle Group conducts numerous live-fire problems of squad, platoon and company size.

The Battle Group is located in a modern kaserne constructed originally as the home of a German Panzer Regiment . . . . . but much of the time is spent in nearby training areas in preparation for major field exercises conducted in Western Germany.

By training under rigorous conditions of weather and terrain, and by using the newest weapons, equipment and techniques—as evidenced by recent airmobile operations—the 1st BG, 15th Infantry, maintains a constant peak of combat readiness.

by CAPT HUGH MCWHINNIE

The Case for a STRATEGIC ASSAULT FORCE

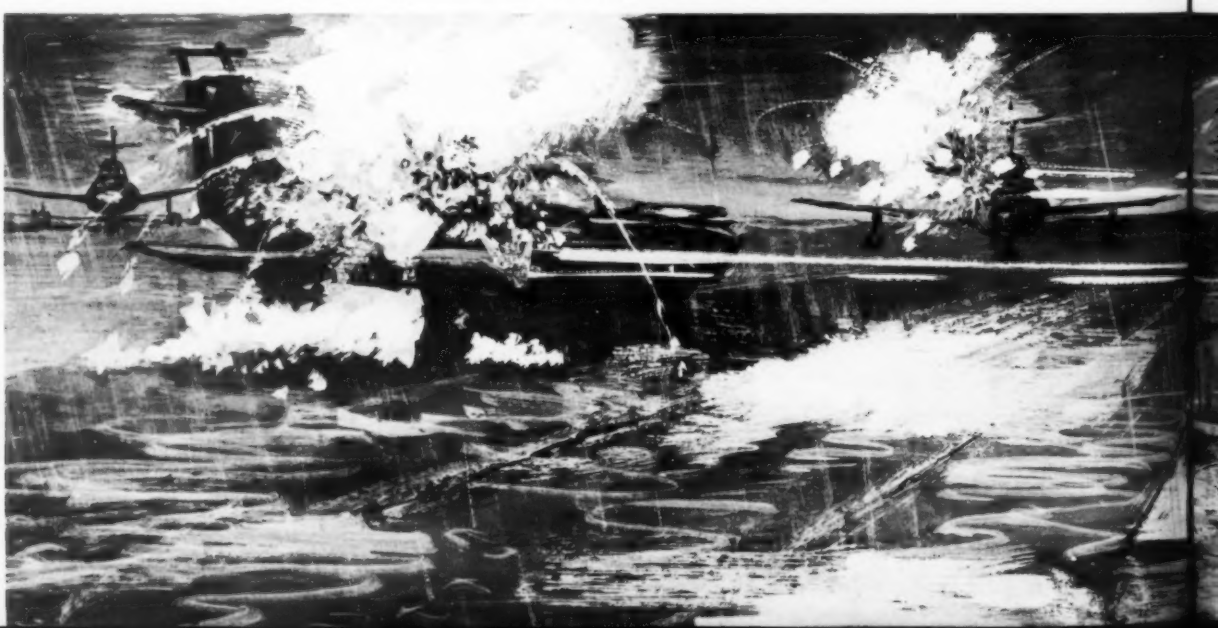
There is no place in modern war for the Marquis of Queensberry Rules.

The Marshall Award, named in honor of General George C. Marshall, was established by the Infantry School to bring recognition to the member of each Infantry Officer Advanced Class who submits, as a part of the Effective Writing Program, the article which makes the best contribution to the Military Art.

THE DATE: 12 June 1963; the place: CP of the 4th Aggressor Rifle Division.

Major General Juan Pinero, Commanding General of the 4th Aggressor Rifle Division, has just returned to his CP. With key members of his staff, he has received the corps order for the attack on US Forces defending a critical communications center. This center must be occupied by aggressor forces within 24 hours to forestall relief of the defending US troops. General Pinero has been ordered to make the main attack with his division. He has already formed a tentative plan of attack and has discussed this plan with his G2 and G3, both of whom accompanied him to receive the corps commander's order.

The division chief of staff assembles all of the staff and special staff in the war room and General Pinero quickly gives them an outline of his plan. Everyone settles down to work out the details of the attack, and these are rapidly nearing completion when a struggle is heard outside. The door is forced open and five soldiers wearing the insignia of the US Strategic Assault Force leap into the room. A burst of fire from a machine pistol kills several of the staff, and before the remainder can react, they too are shot down. The leader of the US group moves to the tables and destroys all the notes and overlays; the remainder of the group ensure that none of the enemy staff are left alive. The resultant situation can be imagined: every man at division headquarters who had knowledge of the coming attack is dead; key staff members will have to be replaced. Hopeless confusion will reign tomorrow, instead of a well-planned attack. All of this was caused by a tiny group of highly trained spe-



A MARSHALL AWARD Selection

cialists in unorthodox warfare!

Ridiculous? Far-fetched? Perhaps it is, but how about the following?

A small force is hiding about 150 miles behind enemy lines. They have been there for a few weeks and in that time have conducted small scale operations. To date, they have destroyed several ammunition and gasoline dumps but mainly their efforts have been directed against enemy airfields. In this short period they have been credited with the destruction of about 200 aircraft of all types. One last raid is planned before they return to friendly lines. In this raid they plan to employ jeeps mounting four machineguns each. The basic plan is to cross 40 miles of enemy territory, drive onto the airfield at night and machinegun the parked aircraft.

A total of 18 vehicles will be used. At the scheduled time, they arrive at the airfield and form into an arrowhead. The runway lights are turned on to receive a landing plane and the jeeps rapidly drive forward and follow it as it taxis down the strip. The gunners take advantage of the lights and machinegun the aircraft as they come abreast of them. The enemy has allowed his security to relax and the gunners have a field day on the fighters, bombers and cargo planes lined up on both sides of the tarmac. The enemy reacts to the attack by switching off the lights and firing a few mortar shells in the vicinity of the vehicles. The raiders make a complete circle around the perimeter of the field with very little real opposition and then make off into the darkness. As soon as they have left the lights from the burning aircraft behind, the group splits up and makes its way back to the rendezvous area. The whole operation has been made at a cost of one man killed and three jeeps knocked out. The cost to the enemy? Somewhere in the neighborhood of 40 critical aircraft destroyed, an unknown number of casualties and considerable damage done to the airfield installations.

Cops and robbers? Cowboys and Indians? Maybe, but it actually happened and at a period when the enemy had no aircraft to spare.

The first example is the type mission that a Strategic Assault Force could be called upon to perform in the event of another war. The second story is true and is a condensed account of a mission conducted in North Africa in World War II. Thus, the idea of these shock units is not new; we only have to look at the Skorzeny raid on the mountain top when he rescued Mussolini—or the nine-man ski patrol which blew up the heavy-water plant in Norway and put an end to Hitler's dreams of an atomic bomb. While it is not new, the idea seems to be hard to accept by the more orthodox commanders. Of course, it is underhanded, for success depends on secrecy, an excellent spy system and occasionally such acts of

No enemy official will ever feel secure—even deep in his own homeland.

deception as wearing enemy uniforms. None of these ideas can be exposed to the light of day and so it is a little difficult to sell the "two up and one back" commander on them.

Assuming that this Strategic Assault Force is going to be formed, what units or personnel do we have now who are capable of conducting missions of this nature? Special Forces immediately comes to mind, but their mission is of a different type and they will probably have their hands full with it. The old Ranger units may have been capable of providing the personnel, but their training was directed more towards tactical considerations—to spearhead conventional beach landings, or to raid behind enemy lines to a limited distance. It appears that we do not have the units already in existence to form an Assault Force, so let us consider what is needed. They should be capable of performing hazardous operations in any part of the globe and using any form of transportation to get there. For example, personnel of the Assault Force would be ready to drop by parachute or to land from a submarine in enemy held territory to kidnap, disrupt or destroy. The missions contemplated for them would be feats of audacity, bluff and destruction in areas where we could not use either conventional forces or friendly guerrillas.

For centuries commanders have worried about their two flanks. The organization of Strategic Assault Forces would permit the opening up of a third "flank," in the rear of the enemy. Their efforts would have a strategical significance rather than tactical. Nuclear warfare would change the concept of the Assault Force very little. If anything, it would make them more to be feared. They would be capable of introducing atomic devices instead of more conventional weapons into enemy strongholds. A war fought under nuclear conditions would give this unit a greater punch.

Economy is probably the most convincing argument for such a force. For a relatively insignificant cost, the Army could acquire a force capable of producing destruction all out of proportion to its size and the initial expense of organization. A bonus profit would be realized from the incalculable confusion and dismay which would be caused to the enemy, even in areas far beyond the reach of conventional units. This is the cheap way to wage war. Under the present concept, the modern army and its weapons are highly vulnerable to well-planned and well-executed attacks by tiny, inexpensively maintained groups of determined personnel.

Those are some of the arguments for the Strategic Assault Force. Now let us consider some of the difficulties involved in raising and maintaining

Confusion and havoc will be caused in areas far beyond the reach of conventional units.

this type force. First of all, consider personnel: The daring, unconventional type of soldier with above average intelligence is what we are looking for. Unfortunately, he is the man who gets out of the Army as rapidly as possible when a war is concluded. How can we keep him and, equally as important, how can we train him? We could recruit from all branches of the Army, selecting specialists in the various fields who have the ability of becoming specialists in many other fields. Selected personnel would be daring, intelligent and suited for unorthodox warfare. They would be capable of working in small groups or as an individual. By offering such men the inducement of a job calling for parachuting, flying, skiing, boating, foreign travel, mountaineering, etc. (normally the hobbies of the more well-to-do), there would be no dearth of volunteers.

Training would not be fixed to any any set pattern or tied to any one area but would be flexible enough to allow surprise practice missions in almost any part of the globe. For example, personnel would be prepared to move, on short notice, by air or sea to the other side of the world, perform their mission and report to a rendezvous for pick up and return to the United States. Of necessity, training would probably have to be of an individual nature. There would be no established TOE for this force. Size and equipment of detachments would change from mission to mission.

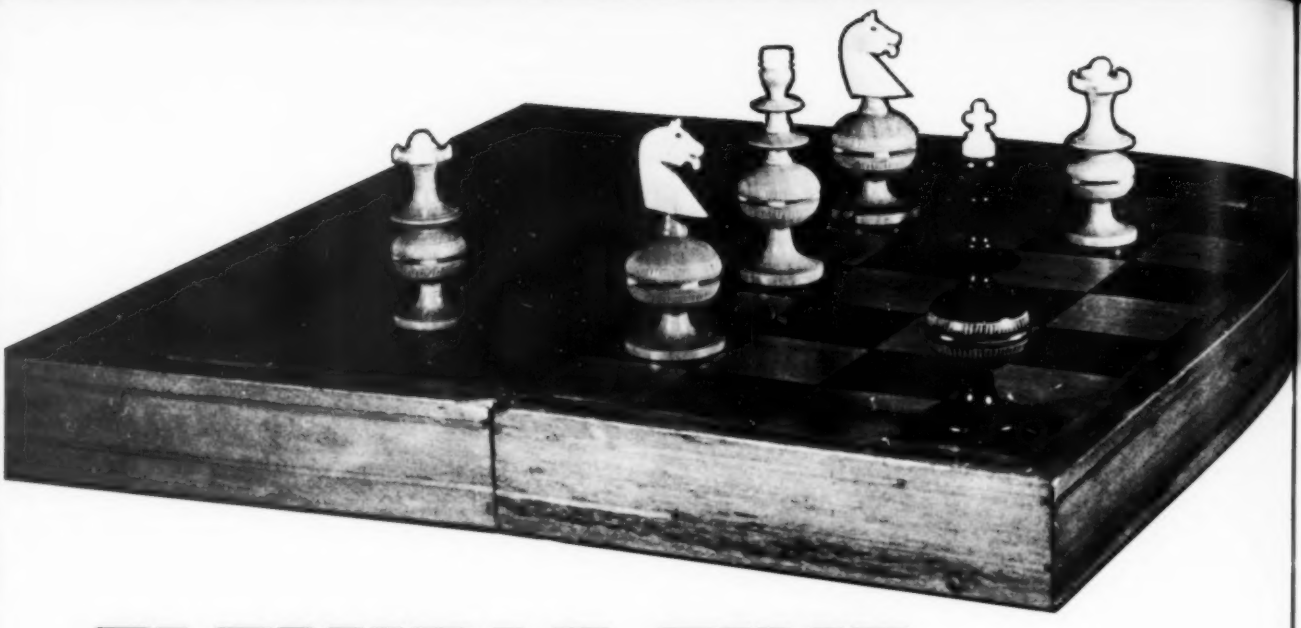
Naturally, we could expect objections to forming a Strategic Assault Force. In the past, the introduction of units of this type into field exercises with the mission of destroying installations did not meet with the approval of the more orthodox commanders because of the confusion which resulted. But, let us face it, this confusion is what we desire most; the sooner the enemy is involved in confusion, the sooner we can take advantage of it. Opposition to the creation of the Assault Force will also be voiced by commanders who are afraid it will result in their losing the more adventurous officers and noncommissioned officers. Naturally, no commander likes to contemplate losing his best men to another unit. This can best be answered by considering the numbers involved. Probably a force of no more than 500 officers and men from all branches would be needed.

Enemy sentinels—smug in their rear-echelon posts—will disappear . . . .

The shape of war has changed. If a small group of dedicated, well-trained individuals can accomplish a mission of major importance to the war effort, let us be prepared to use them. If it means training such personnel now—if it means teaching such "underhanded" tactics as kidnapping and assassination, let us do it. There is no place in modern war for the Marquis of Queensberry Rules. Let us be willing to gamble small units in the hope of winning enormous prizes. The case for maintaining a permanent Strategic Assault Force cannot be dismissed off hand. The implications and probable results of such a force make it deserving of close study and consideration.

Publication of this material does not imply DA or USAIS indorsement of factual accuracy or opinion.

CAPT HUGH MCWHINNIE's military service began in March 1940, when he enlisted in the British Army. During World War II he was with the Black Watch Regiment and the Royal Engineers and later served with Italian partisan forces. He enlisted in the United States Army in 1948 and was commissioned in 1952. Captain McWhinnie subsequently was a battalion S2 and a company commander with the 7th Infantry Regiment in Korea, and later served with the 29th Infantry and 75th Infantry on Okinawa. He also has been a company commander and assistant S3 with the 503d Airborne Infantry Regiment and the 2d Battle Group, 502d Airborne Infantry. Captain McWhinnie graduated from the Advanced Course in May and is now with the 77th Special Forces Group (Airborne).



FLEXIBLE FIVE

We must not become stereotyped on the tactical chessboard.

There are *countless* possibilities

for successful maneuver.

by Col James H. Hayes

Flexibility is probably the Army's most misused and mistreated word. It is used as a cover for loose thinking, as a standard formula by students in solving service school problems, or as a magic gimmick by the harassed planner. The truth is that everyone wants flexibility of mind, weapons or tactical organization because that is the way to victory.

If this quality is so important, can we say that our present battle group structure permits great tactical flexibility? Can the battle group organization provide a variety of tactical formations to meet the abruptly changing situations of the battlefield? Let's investigate and see.

One might conclude from our field manuals that a commander's choice of formations is limited to the column, line, or three up and two back (everyone knows the old student complaint about "three up, two back, feed them a hot meal and attack thru the green"). However, further reflection will show that today's battle group can be deployed in at least five basic ways as shown in Figure 1.

Five basic formations certainly give a reasonable variety of capabilities. That's not all, though. Other variations can be squeezed out of the basic five because each of the originals can also be modified in a number of ways. In other words, we have an entire scale of formations, and we can play the organizational piano as befits the mood of the battlefield. To illustrate this point, let's consider a sequence of basic situations. The actions are entirely theoretical and are deliberately made as simple as possible. Complexities like atomics, motor vs foot mobility and the use of supporting weapons have been deliberately omitted so that we don't "fight the problem." Once the principles involved in the use of the formations are grasped, their application to other situations can be made by the reader at his leisure. Moreover, it should be noted that although the battle group is depicted as operating independently, the formations discussed could also be utilized when the battle group is acting in conjunc-

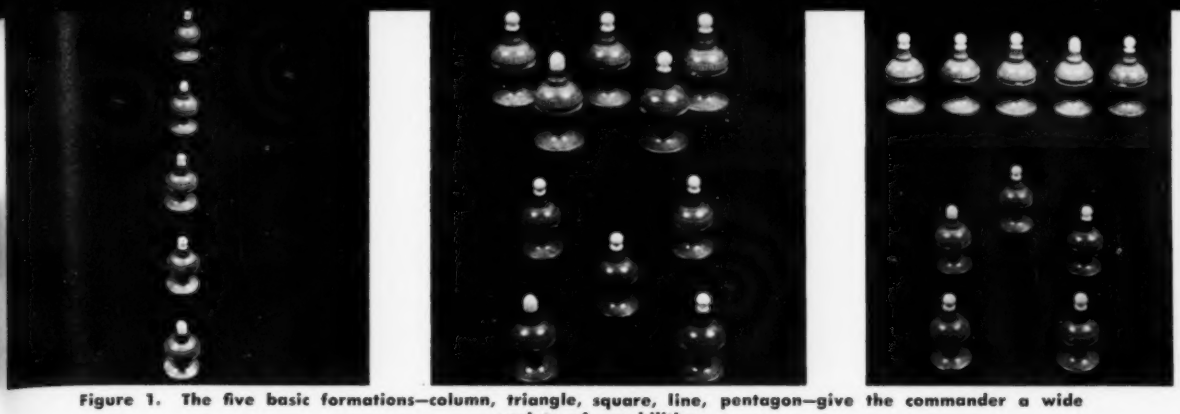


Figure 1. The five basic formations—column, triangle, square, line, pentagon—give the commander a wide variety of capabilities.

tion with the rest of the division. All these important points are suppressed in order that full attention can be concentrated on the reaction capabilities of the battle group organization.

Let's assume that division has directed one battle group to advance rapidly south in order to locate and destroy enemy forces. Contact is not imminent and the move is initially non-tactical. Let's see what can happen to this battle group and the various formations it may adopt.

To begin the initial movement, the column is the classic solution because it provides maximum control and maximum speed of movement (Figure 2A). There are no major problems inherent in the use of the formation and it solves the problem neatly and concisely.

However, as the advance continues, the situation becomes more complicated. Contact is still unlikely, but now it is a factor to be considered. The battle group therefore adopts a minor but important variation of the column—the advance guard formation (Figure 2B). It provides security to the front and flanks and still permits rapid and efficient movement forward. Through the ages, commanders have routinely used the advance guard formation to ensure the uninterrupted advance of the main body.

The southward advance continues and information is received from division that enemy units have been reported to the west. The information is vague, but division believes the western flank to be in more danger than the eastern flank. A new element of possible danger has been introduced. The safety of the battle group supply, service and supporting and attached units is a factor for consideration. Moreover, a rapid advance is still required. These considerations require the column or some suitable variation of it to provide maximum speed and the necessary security. A major variation is required—multiple columns (Figure 2C). Most of the combat units are placed in the western column while the administrative units are placed in the eastern column with minimal combat power in the east column. Thus, our fighting units are interposed between the support elements and the enemy for maximum security. As we advance southward the situation will undoubtedly become more complex.

It is an axiom of war that opposing forces attract each other. Our theoretical war must, of course, be subject to this truth so, in due course, we find that immediate contact is imminent. The enemy is looking for us; we are looking for him; the die is cast.

The battle group must continue its rapid advance, but the risks have been significantly increased. The formation adopted must be able to meet a threat from *any* direction. Additionally, any enemy threat should ideally be countered by an immediate and violent attack on one or both of its flanks.

There is a formation capable of fulfilling these requirements. Let's call it the Z formation (it looks like a Z) and adopt it for the next phase

Flexible Five

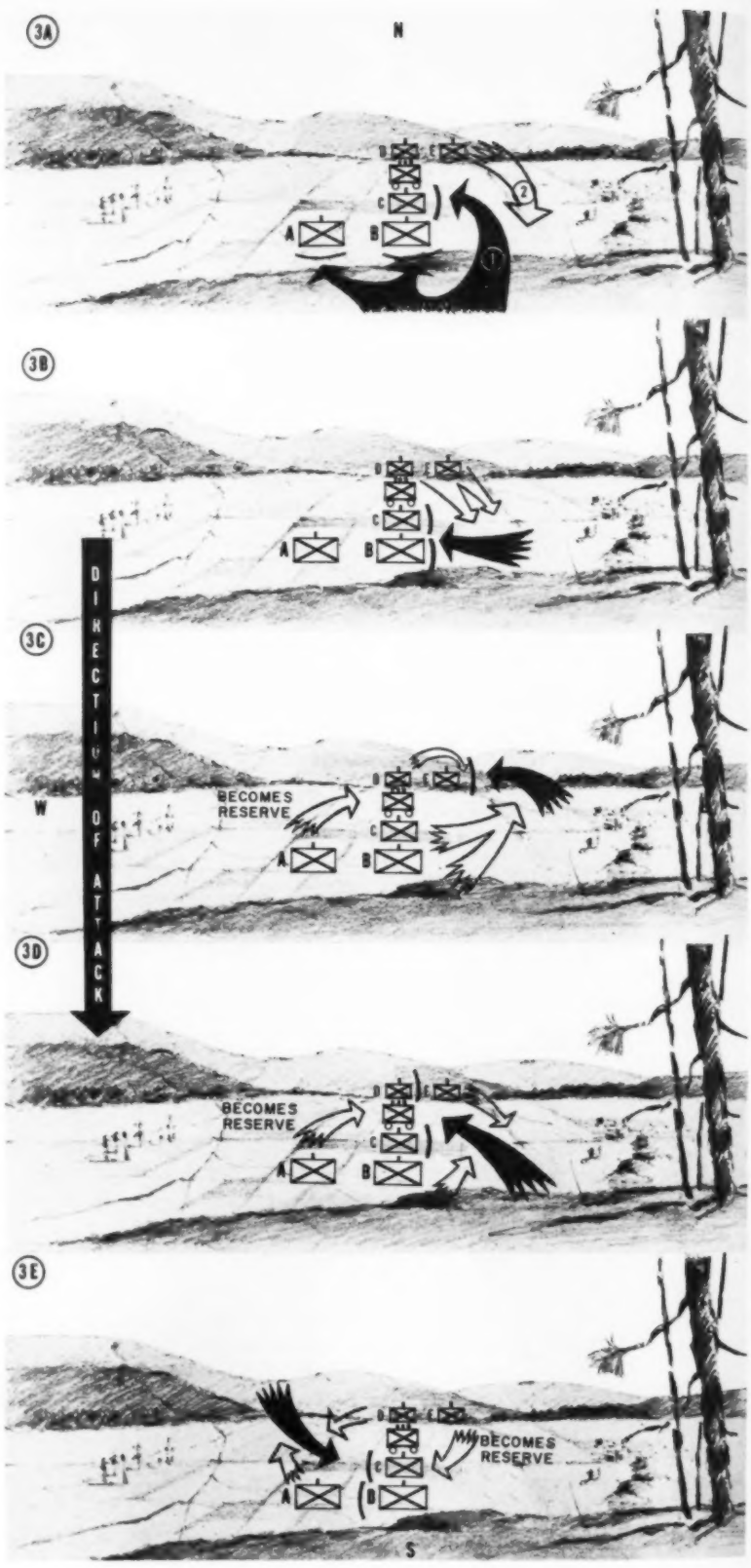
of the southward movement. It can be a Z-right or Z-left depending on which flank is more threatened. However, let's use a Z-right because it places more forward power on the battle group west flank.

As the advance is continued, Alfa and Bravo Companies encounter enemy to their front (Figure 3A). Forward movement is stopped because of enemy strength, and the companies hold while necessary plans are being made to resume the advance. However, the enemy launches a surprise attack (1), designed to flank Bravo Company. But it is evident that he did not reckon with the flexibility built into the Z formation. While Charlie Company blocks, Echo Company attacks the enemy flank (2). Delta Company remains in reserve for employment by the battle group commander as the situation permits.

Should the enemy strike the battle group in the flank (Figure 3B), Bravo and Charlie Companies quickly establish blocking or defensive positions. Delta and Echo strike the enemy a sharp blow in the flank. Note, again, that one company (Alfa) is still available as a reserve.

Variations of this situation are shown in Figures 3C and 3D.

It is clear now that Z-right is designed to minimize a threat from the left flank. Consequently, an attack from the right flank (3E) would apparently strike at a weak point of the formation. Such, however, is not the case, for Bravo and Charlie can quickly block the enemy effort while Alfa and Delta can maneuver to attack the enemy flanks. A reserve is still held available to handle unexpected events or to reinforce success and deliver the knock-out punch.



Though Z-right is designed to handle threats from the left flank, it can handle with equal facility an attack from the right flank.

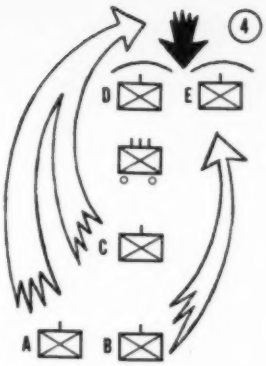
What of an attack from the rear? This is certainly the most feared type of attack. It strikes in a direction in which man is inherently weak—he cannot turn his head 180° and his elbows and knee joints cannot react in this direction. Moreover, his natural body protection such as the rib cage is not as strong in the rear. The attack from the rear, such as that shown in Figure 4, is feared, therefore, because of compelling and powerful psychological reasons.

The attack from the rear can be met with considerable facility. Delta and Echo immediately block while Alfa and Charlie counterattack. Bravo becomes the reserve and can be repositioned as required by the situation. Naturally the attack from the rear is more difficult to meet; nevertheless, the Z formation does provide a sound plan for meeting and defeating it.

Let's digress from our situation for a moment to note the advantages of the Z formation.

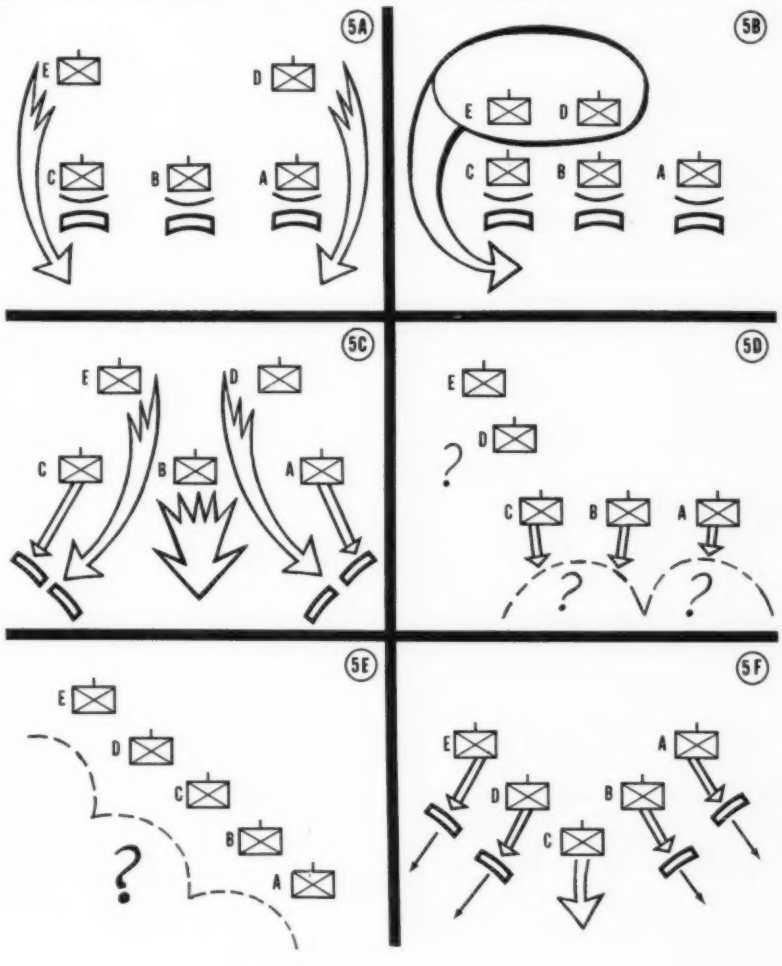
- It can meet an attack from any direction.
- It has an inherent capability to provide a holding force (fix 'em), a maneuver force (fight 'em) and a reserve force (finish 'em). This capability exists regardless of the direction from which an enemy may attack.
- It is capable of rapid forward movement because of its similarity to the column.

These advantages are significant and should warrant further study of the Z with a view to its adoption in our service manuals and our school teaching. This is particularly pertinent in light of the anticipated fluid battlefield of the future where units may be required to maneuver over wide areas in order to preclude atomic destruction. The Z formation provides a readily maneuverable group capable of compacting into a fist or extending itself like a hand.



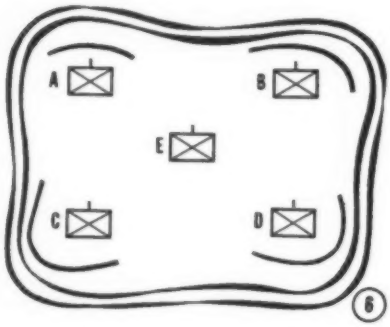
Once contact is made and the situation developed, the major problem involves methods of penetrating or flanking the enemy's positions so as to continue the southward advance. Now, that old standby, three up and two back (the triangle), comes into its proper place. However, it too, gives a wide variety of choices depending upon the situation and the scheme of maneuver.

For instance, the commander may not know the enemy situation well enough to determine whether to maneuver around one or both flanks. He meets the dilemma by placing one company on either flank (Figure 5A). Alternatively, the scheme of maneuver for one reason or another can be decided in advance. Then, the two rearward companies are oriented on the proper flank (Figure 5B). Or, if the situation dictates a penetration followed by a rapid exploitation of the gap, then maximum combat power, to include reserves, is concentrated at the planned point of penetration (Figure 5C). And finally, the situation dictates echelonment to one flank or another and thus necessitates orienting the reserves appropriately (Figures 5D, E & F).



Flexible Five

In every war and to each unit there must come a time of minor or major crisis. Our little war is no different and the battle group is ordered to defend a critical area. Relief will be forthcoming in due course but temporarily all avenues of withdrawal are blocked and the enemy is converging from all sides. Clearly, all around defense is the overriding consideration and the square or diamond formation is adopted (Figure 6).



6

This formation has been discussed as a formation for patrols but the application to battle group level has not been made in appropriate manuals. Note that for the battle group in the situation discussed there are several marked advantages of the diamond (or square) formation:

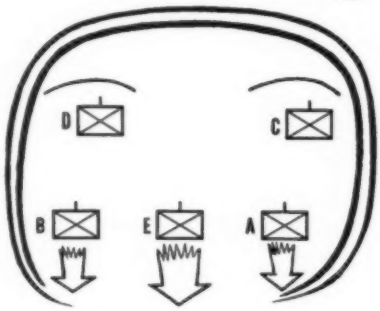
- It provides all around defense.
- It is easy to control.
- The reserve is centrally located and can utilize the principle of interior lines to advantage.
- Combat power can be easily concentrated in any desired direction to permit a breakout.

This last advantage is an important one and bears further examination.

The square or diamond formation permits concentration of combat power quickly at any selected point. It is, paradoxically, the military equivalent of the circle. Like the circle, any of its points is equally distant from the center; consequently, a centrally located reserve can rapidly counterattack or reinforce any point. It has the capability of striking in any one of the 360° of a circle.

In our situation, the commander has foreseen the requirement to break out to the south. Consequently, the battle group attacks with three up and two back: Alpha, Bravo and Echo lead the assault (Figure 7)

7



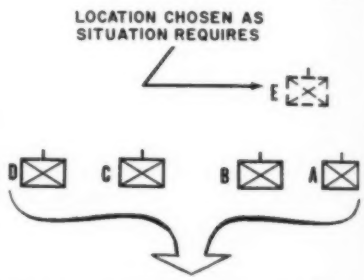
while Charlie and Delta protect flanks and provide rearward protection until the breakout is effected. Similar considerations apply for any other desired direction of attack. In all instances, maximum power can be concentrated in the desired direction. Moreover, a significant security element is available to provide necessary all around protection in the vital early phase of the operation.

All defensive situations do not require the diamond. We could, terrain permitting, adopt the Z formation. The diagrams shown for the Z would apply. Obviously, switch and blocking positions would be required to counter enemy attacks from various directions. However, here again it is the imagination of the commander that is the key element. He must perceive that the terrain in fact permits a given formation. The point is clear: He does not automatically think of three up and two back for all defense. He thinks of the situation, the terrain, the morale of the troops and what the enemy can do. Service school teaching tends to be somewhat stereotyped because it must illustrate principles. However, it is the commander's prerogative to apply those principles as his special circumstance dictates.

As it transpires, the commander in our war does apply the principles with force and imagination, and enemy resistance begins to deteriorate.

Consequently, division orders immediate resumption of the offensive with maximum power exerted to the front. A broader frontage is also assigned to the battle group because of the lessening of enemy resistance. An important variation of the triangle can, therefore, be adopted. Four companies are placed in advance with but one in reserve (Figure 8). This formation exerts maximum combat power on the weakened enemy force but still maintains an adequate reserve to exploit further success or

8



meet any unexpected enemy attack.

Fortunately, any other enemy resistance becomes academic because his forces collapse. We must mop up his isolated fragments so that a rapid advance may be resumed. We require no real reserve because of the scattered nature of his units and all five companies can be on line. Thus, maximum frontage is covered and pockets of resistance are quickly eliminated.

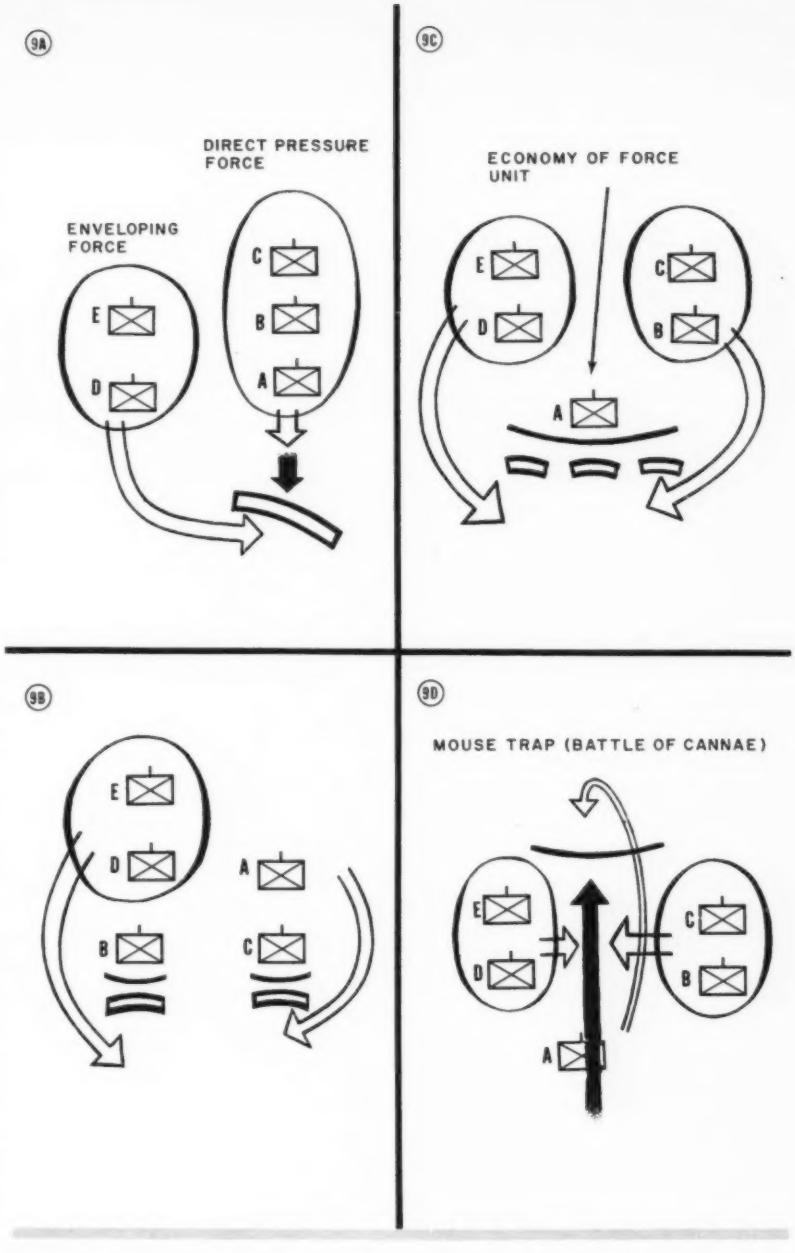
The sporadic resistance is overcome. The enemy begins a rapid retreat southward. In accordance with doctrine, the pursuit is pushed to the limit of endurance of men and ma-

terial. Enemy forces must be completely destroyed. For this our pentagon formation (Figure 9A) is an excellent solution. It can be used on more than one road and is easily broken into a direct pressure force and an encircling force. The direct pressure force will give the enemy no rest while the enveloping force rapidly blocks the enemy's retreat so that his destruction is assured.

Actually the pentagon is a variation of the multiple column. It can, by the application of imagination, be used in an attack formation where the battle group is assigned a narrow frontage or where it is desired to feint with one company on the left flank while attacking with a major force of two companies on the other. Many other variations of this theme are possible as shown in Figure 9.

The preceding discussion of battle group formations is not exhaustive. It has, however, concentrated on one major consideration. ROCID is here now. It will stay with us for a long time. Though it may have the deficiencies its critics point out, it must be used if war comes now. Note, therefore, that it is extremely adaptable and it does permit the commander to use those priceless ingredients for which the American Army has always been noted: imagination, foresight and elan. These ingredients are why the raids of Jeb Stuart, Jackson's Valley Campaign and the battles of Robert E. Lee have been studied by foreign armies as masterpieces of tactics. These ingredients have helped pioneer many seemingly impossible tactical concepts. Our large scale airborne assaults in World War II and the application of amphibious power in the Pacific are telling examples of basic principles applied with daring, skill and imagination. ROCID gives us a vehicle for even more astounding applications of simple facts, imaginatively used on the battlefields of tomorrow. One thing is clear: To the question "Why five?", the simple answer is "FLEXIBLE FIVE."

The opinions expressed in this article are those of the author and do not necessarily reflect thinking of the United States Army Infantry School.



COL JAMES H. HAYES, Chief of the Infantry School's Doctrine Publications Office, received his commission upon graduation from the USMA in 1942. During World War II, he served with the 317th Infantry Regiment, 80th Infantry Division, as platoon leader, company commander, regimental S2, battalion commander and regimental executive officer. Following World War II Colonel Hayes taught mathematics at the United States Military Academy. During the Korean War, he was Chief, Plans Division, G2, Eighth U.S. Army. He graduated from the Command and General Staff College in 1952, after which he attended the Armed Forces Staff College in England. He then became Chief of Plans, G1, United States Army Europe. Colonel Hayes graduated from the Army War College in 1958, and holds a Master of Science degree from Cornell University.

YOUR INFANTRY CAREER

This department provides important information on policies and personnel actions which affect your Infantry career. Material for Active Army officers is furnished by Infantry Branch of the Officers Assignment Division. Information for USAR officers and enlisted Infantrymen is obtained from other Department of the Army agencies.

From Infantry Branch

LANGUAGE TRAINING

A Department of the Army goal is to provide language training for all career Army officers who have the aptitude for foreign languages. AR 611-82, "Selection of Personnel for Language Training," has been revised to include mandatory language training if quotas are not filled by volunteers.

Priority for selection of officers for language training will be given to those officers who have completed the Infantry Officer Career Course. This training presents a fine opportunity for Infantry officers prior to assignment in an overseas area in which the language may be used. Proficiency in a foreign language further enhances an officer's potential and opens new avenues for career development.

DA Circular 621-2 (14 March 1960) lists course periods and languages available for Fiscal Year 1961. Interested officers who score 18 or above in the Army Language Aptitude Test and are otherwise qualified should make application under the provisions of AR 611-82.

OFFICER PROMOTION

A question frequently asked at Infantry Career Branch is: "What is the present promotion picture?" The status of temporary promotion, by grade, is as discussed below. Promotion to first lieutenant is not included since promotion to that grade is a function of the field. It is emphasized that the expected times that recommended lists will be exhausted are only *anticipated*. There can be a very significant difference between the time anticipated and the time that lists are actually exhausted.

To Captain—The last board adjourned in June 1959. The criteria for selection was on a "fully qualified" basis. The zone of consideration extended through 30 April 1956 (Promotion Eligibility Date). The recommended list is contained in DA Circular 624-64, 1959. It is anticipated that the current list will be exhausted in early 1961.

To Major—The last board adjourned in July 1959. The criteria for selection was "best qualified" with the primary zone extending through 31 May 1952 and the secondary (outstanding) through 31 December 1956. The recommended list is contained in DA Circular 624-66, 1959. It is anticipated that the list will be exhausted in September 1960.

To Lieutenant Colonel—The last board adjourned in

January 1959. The criteria for selection was "best qualified" with the primary zone extending through 31 August 1951 and the secondary through 31 December 1955. The recommended list is contained in DA Circular 624-47, 1959. It is anticipated that this list will be exhausted in August 1960.

To Colonel—The last board adjourned in October 1959, "best qualified" having been the criteria for selection. The primary zone of consideration extended through 15 December 1950; the secondary through 31 December 1954. DA Circular 624-73, 1959, contains the recommended list which, it is anticipated, will be exhausted in early 1961.

The 1960 schedule for convening of promotion boards is as follows:

Captain—June 1960
Major—May 1960
Lieutenant Colonel—April 1960
Colonel—August 1960

The following is the information on selections for RA promotions for 1960:

Grade	Zone by Basic Date	PL No.*	Method**	Selection Board Convenes(d)
To Capt	through 28 Jun 1954	23465	FQ	Feb 1960
To Maj	through 30 Jun 1947	13897	BQ	Mar 1960
To Lt Col	through 31 Dec 1941	8148	BQ	Mar 1960
To Col	to be announced		BQ	Dec 1960

*Promotion List number is as listed in the 1959 Army Register
**FQ—Fully Qualified
BQ—Best Qualified

REGULAR ARMY PROCUREMENT

Infantry has vacancies in all year groups except 1942, 1943, 1948, 1949 and 1952. Overstrength alone will not preclude appointment in these year groups; however, to be selected, an officer must be outstandingly qualified.

Many officers write to Infantry Branch inquiring as to the specific reasons for non-selection. The selection of officers for appointment in the Regular Army is the responsibility of a board of senior officers who are not required to furnish the reasons for their decisions; past attempts to determine these reasons have proved futile.

In many cases the lack of a baccalaureate degree or reasonable assurance of attaining one in the near future is the only obvious reason. A college degree is a prerequisite for many assignments and the lack thereof causes the individual to be denied certain assignments essential to career development and the needs of the service. All officers submitting RA applications should ensure that the latest information regarding their educational attainment is available to the Board.

All officers considering making application for Regular Army should be aware of the fact that their entire official record is available to and is considered by the Selection Board. Past performance is the greatest possible indicator of future potential. Recurring adverse comments in efficiency reports often are a contributing factor to non-selection. Officers who have applied unsuccessfully several times in the past should consider visiting Infantry Branch and reviewing their official records. Officers assigned to the Branch will be available to assist in determining deficiencies and render advice to aid in improvement. Should a personal visit be impractical, they may designate a representative to review their records and obtain the desired information (see AR 640-12). Officers assigned to The Adjutant General's Office, which includes the Officers Assignment Division, may not be so designated.

RETENTION OF RESERVE OFFICERS BEYOND RETIREMENT

Infantry Branch is receiving many inquiries, both official and unofficial, regarding the possibilities of retention of officers beyond retirement qualification date. The selection of officers for retention is the responsibility of the Department of the Army Active Duty Board and is based upon an impartial review of the individual's entire record of military service. Since the close of the Korean War, the military services have been reducing in strength. Infantry has been consistently overstrength, and the use of voluntary relief from active duty as well as retirement when eligible is the preferred means to attain our authorized strength. Consequently, in the past, only a few outstanding officers have been retained by the Board. Those officers selected for retention during Fiscal Year 1961 were notified prior to 15 January 1960 and asked whether they desired to continue on active duty. Those not selected are being notified of their official release date as rapidly as possible. A minimum of six months notification is the rule.

In the interest of notifying the individual as soon as possible (with a goal of at least one year's advance notification), the Active Duty Board will consider those officers attaining eligibility during Fiscal Year 1962 prior to 30 June 1960, and those qualifying during 1963 in the fall of 1960. Thereafter, the Board will consider individuals two years in advance. It is not anticipated that any large number of Infantry officers will be retained in the future.

Many very fine officers have not been selected for retention but this should in no way be considered a reflection on their ability. Of necessity, the majority of officers must be released when retirement eligibility is attained in order to reach authorized strength as soon as possible.

CAREER (Continued)

ADDITIONAL QUERIES

QUESTION: How does the Reserve Officer Personnel Act of 1954 (ROPA) affect me as an Infantry officer, USAR.

ANSWER: The Reserve Officer Personnel Act was passed in 1954 and made effective 1 July 1955 in order to provide for a younger Reserve with more opportunity within the Reserve. It must be emphasized that the law concerns an officer's active status in the Reserve primarily, but indirectly concerns his active duty status in the Army of the United States in that relief from an active status in the Army Reserve automatically is cause for relief from active duty.

Its basic provisions are these:

- For brigadier generals and colonels: An officer in the grade of brigadier general or colonel will be separated from an active status in the Reserve by discharge or transfer to the Retired Reserve upon completion of 30 years total service in a commissioned status, or five years in permanent grade, whichever is later.
- For lieutenant colonels and below: An officer in these grades will be separated from an active status in the Reserve by discharge or transfer to the Retired Reserve upon completion of 28 years total service in a commissioned status.
- The maximum age for participation in the Army Reserve Program is established at 60 for those officers in the grade of brigadier general and below.
- An overall exception is provided in Section 326 of the Act which states that during the period 1 July 1955 through 30 June 1960, the maximum ages will be 58 for colonels and 55 for lieutenant colonels and below.
- Despite the overall age limit of 60 years, the total years service provision will apply generally on and after 1 July 1960 to all officers, since total service is defined as the greater of either of the following:

(1) The total periods for which an officer has held an appointment as a commissioned officer in any component of the Armed Forces or the Army of the United States without component.

(2) The period of time by which an officer's age exceeds 25 years.

- The net effect anticipated in the vast majority of cases is that brigadier generals and colonels will be forced to be separated at age 55 and lieutenant colonels and below at age 53.
- Department of the Army as a matter of policy has made the following major exceptions to the above provisions:

(1) Those officers who are within two years of attaining retirement eligibility (20 years active Federal service, at least 10 of which are commissioned) at the time they would otherwise be released from the active Reserve, and therefore active duty, will be retained on active duty until qualified for retirement.

(2) Those officers who have been retained on active duty by virtue of the fact that they can qualify for retirement prior to mandatory separation from the active Reserve as provided during the period 1 July 55–30 June 60, but cannot so qualify under the maximum service criteria effective 1 July 1960, will be retained until they qualify for retirement. An officer recommended for promotion to permanent colonel will fall under the provisions of the act affecting colonels.

QUESTION: How can I transfer to another branch?

ANSWER: Applications for branch transfer must be submitted through channels under the provisions of AR 614-100. The action taken on the request will depend upon the officer's qualifications and the needs of the service at the time the application is received at the Department of the Army. Regular Army officers normally are not permitted to transfer until they have completed a combat arms detail, if assigned or appointed to certain of the non-combat arms, and have served two years in their basic branch. However, commissioned service in the branch in which originally assigned or appointed prior to appointment in the Regular Army may be counted in determining eligibility. Thereafter, transfer may be allowed between the basic branches only. Reappointment, however, may be effected in special branches in special cases. Reserve officers will not be permitted to transfer if serving on their two-year initial obligated tour unless cogent reasons are indicated. Thereafter, transfer between the basic branches or special branches may be effected. National Guard officers on active duty are not authorized to transfer from one branch to another.

QUESTION: What are the time in grade requirements in order to be eligible for consideration for temporary promotion from the secondary or outstanding zone of consideration?

ANSWER: Officers will be eligible for consideration for promotion to the grades of temporary major, lieutenant colonel and colonel from the secondary zone of consideration when, as of 31 December of the year of consideration, they have served in the next lower grade for a minimum of 3, 4, and 5 years respectively.

QUESTION: What is the effect of being "fully qualified" but not selected for promotion in the AUS?

ANSWER: Although being fully qualified but not selected for promotion is not a passover, the significance of this action should be recognized.

First, non-selection places an officer behind his contemporaries who were selected. How far behind, of course, depends on the length of time taken to promote the list. In the past this has been in excess of a year.

Second, non-selection indicates that the officer's record did not compare favorably with the records of those selected. Since the criteria used by the board is not

divulged, the exact determination of why he was not selected cannot be made.

Third, an officer not selected will be competing for future promotion with officers junior to him as well as with those who were not selected at the same time he missed the previous list. The records of these junior officers can be assumed to be as good as those in the previous zone. Also, the previous non-selectee will be working hard to improve his record.

QUESTION: Can a Reserve officer be involuntarily relieved from active duty for reasons of efficiency and manner of performance of duty only?

ANSWER: Yes, he can. Under the provisions of Section XV, AR 135-173, the records of officers on active duty, less those serving on term commitments, are screened annually at the Department of the Army to determine those officers whose degree of efficiency and manner of performance require relief from active duty or elimination from service.

The initial screening is performed by the Career Branches and the records of those officers recommended for relief from active duty are then referred to the DA Active Duty Board for review and determination. The Board does not divulge the reasons for its decision; however, the decision of the Board is final.

Officers selected for release will be relieved from active duty on the 90th day after receipt of notification unless they request earlier release.

QUESTION: Since Section III (description of rated officer and comments) of the efficiency report is not included in the AEI (annual efficiency index), of what value is it?

ANSWER: In personnel actions, such as when an officer is being considered for assignment, promotion, schooling, an indefinite service agreement, transfer, detail, elimination from service, etc., many factors are considered. Normally, boards and reviewing personnel have available for consideration an officer's official Department of the Army personnel record. An important part of the officer's record is his efficiency report file. Section III of the report provides boards with a picture in the rating and indorsing officers own words of the officer as seen by them during the period of the report. Frequently, this is the only place in an officer's record that reviewing personnel can obtain information concerning an officer's behavior, personality and characteristic strengths and weaknesses.

Generally, boards do not divulge the reasons for their decisions. It is quite possible, however, that adverse comments made on an officer's efficiency report may have a bearing on a board's decision. This is particularly true if the comments are repetitive and made by several rating and indorsing officers.

Therefore, to answer the question, section III of the efficiency report is of considerable value and importance due to the frequency and nature of its use.

AIRBORNE FIELD GRADE VACANCIES

A growing problem is being experienced by the Officers Assignment Division of Infantry Branch as concerns the filling of certain field grade airborne requirements, particularly in the grade of lieutenant colonel. Much of this problem is being caused by the tremendous number of 20-year retirements of officers in the field grades, many of whom are airborne qualified.

In the near future there will be a number of very fine airborne assignments available for qualified majors and lieutenant colonels. According to recent studies, one out of three lieutenant colonels of Infantry currently in CONUS is now on his final retirement tour, and many of these prospective vacancies must be filled by airborne qualified officers.

Therefore, field grade officers (particularly lieutenant colonels) who have not completed airborne training should consider achieving this additional qualification.

AIDE-DE-CAMP DUTY FOR INFANTRY OFFICERS

In reply to many queries from officers concerning aide duty, it should be noted that Infantry Branch considers that duty for an Infantry officer as aide-de-camp is desirable. Such duty not only broadens an officer's career base by exposing him to the problems and functions of the several arms and services, but also gives him an excellent opportunity to observe leadership techniques and troop leading procedures employed at the higher echelons of command in the Army.

Maximum benefit from aide duty can be realized only after an officer has served a sufficient time with troops to make him thoroughly proficient in the application of the basic fundamentals of command and troop leading techniques.

On the other hand, an officer's duty as aide-de-camp should be limited to a maximum of two years and should be followed by an assignment at an echelon of command in keeping with his grade and length of service. Thus, he can realistically apply the knowledge gained and lessons learned during his tour as aide.

ENLISTED CAREER INFORMATION

Proficiency pay tests covering 190 skill levels in 63 MOSs are scheduled in August for nearly 50,000 soldiers. The tests will probe the skills of the largest number of men ever tested in any pro-pay exam period, and will include E8s and E9s in certain fields where pro-pay is awarded. Additionally, personnel in 40 MOS fields now drawing pro-pay will be retested to determine their fitness for retention of their skill dividends.

The August tests are slated for the first 15 days of the month. For those missing the tests because of illness or other valid reasons, makeup exams will be held between 16-31 August. Department of the Army has again warned competing soldiers to be certain that they are tested in the right MOS and skill area.

S60 FLYING CRANE

An advanced design in aerial transport
gives a new dimension
to battlefield mobility.

by MAJ VICTOR K. HARWOOD

TO THE Infantryman, the "Battlefield of the Future" is a rather tired old cliche. Each new equipment development is accompanied by a description of how this gun — or that vehicle — will (quote) "revolutionize" the (quote) "Battlefield of the Future."

To take a somewhat radical departure from the ordinary, I will *not* claim that my subject — the Flying Crane — will revolutionize anything. What it will do (and this is important to the Infantryman) is place a whole new perspective on all types of helicopter transportation. This rather odd-looking air vehicle will permit extremely efficient handling of bulky articles (much more so than today's air vehicles), and will give a larger payload capacity for the same size and cost helicopter.

And even though the Flying Crane doesn't have the graceful appearance of its bird-namesake, it does have much more in its favor. For example, the S60, as it is commonly known, has lifted 10,000 pounds with ease. By comparison, the H37A (which is our largest helicopter in operation today) can lift only 6000 pounds. Unfortunately, this 6000 pound limitation rules out carrying many items of TOE equipment. But what is more important is that the S60 is a prototype vehicle and is really just the beginning. Future cranes capable of lifting *40 tons* are considered feasible. Thus we may find tanks being helicopter-transported (or crane-transported, if you will) in the not too distant future.

In all fairness, it should be noted that the S60 was built around the engine and rotor system of the H37. But, of course, the basic vehicle design was considerably different. In fact, several extreme helicopter design changes are apparent in the S60. One of the most striking of these is the new underslung cockpit. From panoramic windows, excellent visibility for 360 degrees is possible. This fact, when combined with the innovation of a swivel seat in the cockpit, permits cargo loading and unloading to be viewed by the pilot. This is a decided improvement over present aircraft where the pilot cannot see loads carried externally.

Another design change which may alter the configuration of most helicopters of the future is the girder-like body. It extends from the cockpit rearward, under the rotor gear box, to the tail rotor. The vacant space caused by this design is actually the most important feature of the crane, for it is here that the payload will be carried. And the fact that there is no conventional cabin eliminates conformance of load size to cabin

space.

Greater simplification of cargo loading also has been made possible by this unique design. The S60 can straddle loads for their direct attachment to its body. For sling loads, a winch-operated cargo hook located at the aircraft's center of gravity is provided. This hook is free to swivel 360 degrees or may be locked in a fixed position. A choice of release mechanisms is provided wherein the load can be released by remote control from the cockpit, manually from the cargo hook itself or automatically on touchdown. The two-speed winch is equipped with 100 feet of usable cable and is controlled by the pilot from the cockpit. A special tensiometer indicates to him the weight of each load as it is picked up, and a cable length indicator reflects the exact distance between the winch and the load.

In loading, manpower requirements are reduced since the pilot of the crane can see and control these operations. This eliminates the necessity of having a guide on the ground to give the pilot arm-and-hand signals for control. Since the loading mechanism itself has been simplified, only one man is necessary for hook-up. In present helicopters, a three-man ground crew is required.

The crane concept is, of course, an expansion of external sling loading as used by current helicopters. The S60, however, is not burdened with the weight of a cabin; moreover, it readily incorporates all of the desirable characteristics of the helicopter to dramatically increase its versatility.

One facet of this versatility which is being explored is the use of interchangeable pods. These pods can be constructed and equipped as personnel carriers, command post installations, aid stations, communication vans and for most military installations that are normally protected by tentage. In addition to providing protection from the elements and conventional and nuclear explosions, these pods can be immediately operational upon landing.

By using detachable pods, the S60 can bring in units or installations that are immediately operational upon landing.

Possible uses for pods of various shapes and sizes are many and, in fact, are limited only by the imagination. The use of this type structure in conjunction with an aerial weapons system or as a means of firing missiles from the air is also feasible.

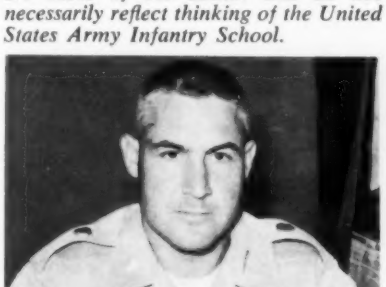
A crane with the lift capacity now planned could aid greatly in amphibious operations. One of the biggest problems it could solve would be in obviating the necessity of massing troops and materiel on beaches just after the assault phase. Pod-equipped cranes might well be used once the beachhead has been established to transport troop reinforcements from ship to shore. Having dropped their pod-loaded troops at an inland location for immediate employment, the cranes could begin operating as logistical carriers to transport heavy vehicles and equipment to desired locations. Return trips could be used for medical evacuation utilizing pods previously dropped as troop transports.

These, then, are a few of the methods in which the Flying Crane can be used. Further development of this concept is being carried on to determine type, size and configuration of pods needed, as well as the modification and improvement necessary for the aircraft to conform to current and future requirements.

Admittedly, the crane will not cause all of the Army's mobility and logistical problems to evaporate overnight. However, an aerial vehicle with the ability to carry loads of 20-40 tons at velocities of 100 mph and greater should do much to make true battlefield mobility a reality.

And with the many worthwhile innovations which come with the Flying Crane concept, it should (quote) "revolutionize" the (quote) "Battlefield of the Future."

The opinions expressed in this article are those of the author and do not necessarily reflect thinking of the United States Army Infantry School.



MAJ VICTOR K. HARWOOD enlisted in the Vermont National Guard in 1940. He received his commission through OCS in 1942 and that same year was assigned to the European Theater of Operations, where his subsequent duty included service with the 1st Allied Airborne Army. Following the end of the war, he returned to reserve status with the National Guard. In 1950 Major Harwood came back to active duty as a company commander at Camp Pickett, Virginia. Since then he has served in various staff and command positions including a tour as a regimental advisor, Military Assistance Advisory Group to Vietnam during 1957 and 1958. Major Harwood has completed the Airborne, Ranger and Infantry Advanced Courses at Fort Benning. He is presently Committee Chairman, Advance Airborne Training Committee, at the Infantry School.

by SGT BUCKHORN

X-SECONDS

HOW MUCH TIME DOES A RIFLEMAN HAVE?

CAN anybody hit moving targets? Can our riflemen, even if warm, well-fed and confident, hit a running, dodging man 100 meters away? We don't know—and under present circumstances we never will know until the chips are down. Even though our Trainfire manual (FM 23-71) states: "Enemy personnel targets are rarely visible except in close assault," we have ignored the fact that most personnel targets our riflemen shoot at will be *large, dangerously close* and *moving fast*.

Consider what we mean by "large." A man 20″ wide at the shoulders is roughly 20 moa (minutes of angle) wide if he is 100 meters away. Square that and you have 400 sq moa. This is a very large target for the rifle; compare it, for instance, to the 3 cm shot group (approximately 18 sq moa) a rifleman is supposed to make on the 25-meter range before he moves to zeroing and field firing. If we move the enemy in, to perhaps 50 meters—still beyond feasible grenade range—the target becomes enormous. This large target area spells out that no great accuracy of aim is required of the rifleman for personnel targets he is likely to *see* in combat.

Consider what "dangerously close" means. At 100 meters you are getting into burp-gun range—others still use these handy lead-slingers—and in just a few less meters, the grenades may begin to fly. At this range the rifleman had better discover his enemy, unlimber the old smoke-pole and build a fire in it right now. Surprisingly, while our training schedules require that some work in target detection be accomplished, you can search in vain for training in this quick reaction to enemy stimulus.

In the record course, mostly fired from a foxhole with the rifle already at the shoulder, the near targets (as close as 50 meters) are exposed for five seconds. This gives time for target detection *and* firing, and is supposed to be pretty stringent. Well, it isn't stringent enough. The enemy is not likely to cooperate, not at 100 meters or less, especially if he knows he is discovered. In jungles or cities, perhaps, a well-concealed man 50 meters away might stare at you for five seconds or five minutes. But if he does, and you don't discover him, two things are possible: he wants to get away himself, or you are a dead man.

How fast should a man react and get off a shot sufficiently accurate to hit this close-in target? Nobody knows. An Ad Topperwein or a Sgt. York could do it in 1½ or 2 seconds, perhaps. Can a lot of people be taught to do it in 3? We ought to know, but we never will until we methodically investigate. The fact is that most men will go into combat without ever in their lives having made a three-second shot.

How about targets that are "moving fast"? No one will state that enemy personnel targets will not move, or perhaps move most of the time, when they are within visual range. What can be the reason for not training with moving targets? I have heard various excuses: "We *did* try it (with targets on railroad tracks) and nobody could hit them."

"It would take years of practice and tons of ammunition."

"It isn't worthwhile—rely on automatic weapons or grenades."

"Fill the air with lead, you'll get them (ever try it with a flock of ducks?)."

"We'll fight mostly at night, anyway."

And so on. I think the main difficulty is that we haven't had a moving target which looks like a man, acts like a man, responds to the directions of a man's brain and which will work in natural, unprepared terrain.

If we could make a target that would look and act like a man in natural terrain, it should, at various ranges: (1) get up and observe (static target); (2) run if shot at, crawl or creep if not, appearing or reappearing among the shrubbery (moving target); and (3) go down in cover (area target). With the target able to move, even if it isn't moving at the moment, the rifleman is presented with a totally new factor—he doesn't know how long he has in which to aim. He has to choose the earliest moment when his sight picture is good enough. He should be drilled over and over in making this decision in training, for it will certainly be the most frequent and difficult of all when he gets in combat. A target that *can* and *does* move (dashing from bush to bush, or coming closer—a target that will not of necessity be exposed for five seconds, or for 10 seconds, but for X seconds) would be worth the cost in terms of usefulness of at least one rocket to the moon.

Consider the measurements we could take with these targets. If the target gets up in front of a man and he does not discover it, we know that he is weak in target detection. If he fires excitedly and misses, he

needs more training in self-control and confidence. If the target starts running and isn't hit, our man needs more practice with moving targets; if he laces the area with bullets where it goes down, we can find out how much he knows about techniques of rifle fire for the squad. By putting all the circumstances of a personnel target exposure into a realistic combat-like situation, we can pinpoint shortcomings and begin to evolve training where it is most needed. This training would combine target detection and firing in a much more realistic fashion than anything we have tried and would furnish stimuli very much like those of combat, requiring combat-like responses. Responses to a single target exposure might range all the way from no firing at all to firing a whole clip; the idea, of course, would be to judge the most auspicious moment, to react quickly with sufficient accuracy—and to kill with one shot.

Presently, our training starts at the precision end of rifle marksmanship. Suppose we started at the speed end, starting the men initially with big, close targets—"Punchy Petes" would serve—which they can easily hit if they have plenty of time. We then could gradually cut down the time of exposure and move the targets farther away, until the shooter could hit a static silhouette 100 meters away 70 per cent of the time in three seconds. Targets that would show some movement—slow at first, then faster—would be used next. Then our firing could shift to a natural terrain range, with the man-like targets exposed in infinite variety for X seconds. With a little thought, much of the time now wasted by orders waiting to fire, for instance, could be devoted to dry firing, practice in firing positions in real terrain and cover, or similar exercises. There should be some time left over for practice in locating the less frequently encountered combat target: static personnel out to 300 meters. But this would come last, as it should, after the shooter's body, mind and eye have developed.

Does this mean abandoning Trainfire? Not at all. Trainfire was and is good. But let's keep it evolving, just as we do with aircraft and rockets, even though we freeze the design occasionally to go into production. Almost everything in Trainfire could be preserved. What is required is (1) amendment: adding moving targets in natural terrain and using formerly wasted time; (2) revision: putting some of the target detection, now done with living men who cannot be fired upon, into an exercise with pseudo-men who *can* be fired on; and (3) re-scheduling: doing the vital, quick-reaction, "good enough" training in basic, and the advanced work, including precision shooting, in advanced individual training.

The rifle is essentially an anti-personnel weapon. If we're really serious about issuing it and using it in great numbers, we should get serious about training with man-like targets in combat-like conditions and ranges. If there is one thing predictable about the individual enemy in combat, it is that his next action is unpredictable. A static piece of flat cardboard will never successfully represent him, nor will it introduce the most serious stress of combat firing: uncertainty of time, motion, size and reaction. We must prepare our men to fire at life-like targets—exposed for X seconds.

SGT BUCKHORN is a frequent contributor to *Infantry* and is an acknowledged expert in the small arms field.

The opinions expressed in this article are those of the author and do not necessarily reflect thinking of the United States Army Infantry School.

REMEMBER WHEN HE SAID . . .

Excerpts from a book of famous military quotations . . . (which will never be published)

"I'm of the old brownshoe Army and there is nothing better than a superior. This outstanding business is just a play on words."

"If I had received that kind of a report when I was a captain, I'd be a general today."

"You've established quite a record and reputation in the operations and training field. In order to broaden your military background, we are going to make you post billeting officer."

"I don't give a d- - - what the field manual says, we are going to do it my way."

"You're going to Major Smith's outfit. He is a fine officer and commander. I should tell you, though, that he is a little bitter because he failed to make the selection list to Lieutenant Colonel."

COMBAT LEADER

TRADE SPACE FOR TIME . . .

INFLICT MAXIMUM PUNISHMENT ON THE ENEMY . . .

DO NOT BECOME CLOSELY ENGAGED. . . .

FOR the Infantryman, it is a long and hard road to the final objective. But in many battles, and particularly early in a war, the road often leads to the rear, while the Infantryman painfully gives up hard-earned terrain to sacrifice space for time.

In the field manuals they call this a delaying action—and the principles for carrying it out vary little from the platoon to the division level . . . "Trade space for time . . . inflict maximum punishment on the enemy . . . do not become closely engaged. . . ."

What the field manuals do not say is that the delaying maneuver requires a lot of teamwork as well as individual courage and professional know-how to carry it off.

This was the bitter lesson learned in Korea in 1950. It was the same old lesson relearned from the Philippines, the Bulge and Dunkerque—so it is not new to Infantrymen.

In future wars, the combat leader may again find himself trading space for time—while he gives up hard-earned terrain to gain a later victory. What must be remembered is that although there is little heroic about giving up ground . . . if it is done with skill, as portrayed on these pages, the delay can become the turning point on the road to ultimate victory. . . . The only road the Infantry will follow.

1 **". . . and cover to the draw on your left. . . ."** When the company commander assigns the delay mission, he prescribes platoon zones of withdrawal, initial and subsequent delay positions, assembly areas and routes of withdrawal, as appropriate.

2 **". . . we can make it tough for 'em there. . . ."** As the platoon leader makes his reconnaissance, he formulates a plan for occupying subsequent delay positions and for delaying between positions. He also selects terrain from which the first elements of the platoon to withdraw can cover the withdrawal of the remainder of the platoon.

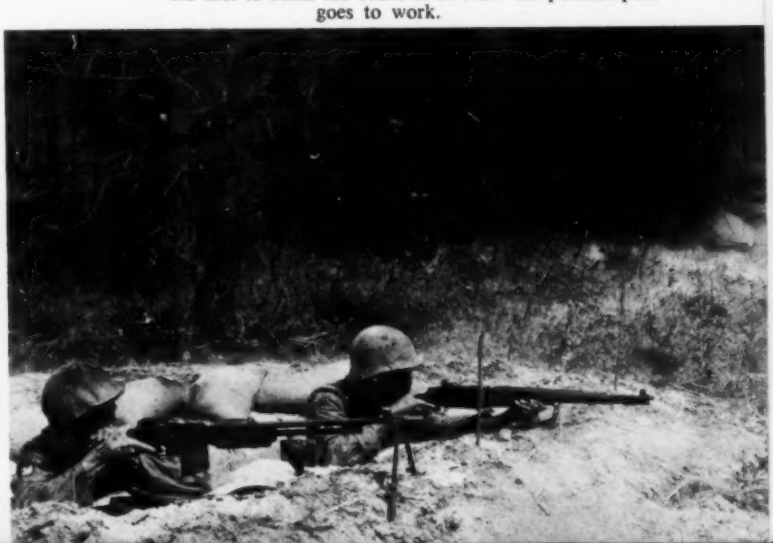
3 **". . . Miller—after you pull back, cover us from that knob. . . ."** The plan involves close coordination and teamwork—and each leader must understand his unit's part in the operation.

4 **". . . the Lieutenant says hurry it up. . . ."** Within the time available, every possible obstacle—including blown bridges—is thrown in the enemy's path to delay his advance.

5 **". . . Roger . . . call it Concentration Alpha Echo 001. . . ."** Artillery and mortar fires are registered on likely avenues of approach.

6 **". . . fire in the hole. . . ."** As contact becomes imminent, bridges are blown. The underlying principle is clear—gain time without fighting a decisive engagement.

7 **". . . they're coming in. . . ."** The security echelon is the first to catch the brunt of it. Now the platoon plan goes to work.



COMBAT LEADER *(Continued)*

8 **". . . pick 'em up before they get to the draw. . . ."** To delay the enemy advance as long as possible, maximum fires are brought to bear at long range.

9 **". . . keep your eyes peeled. . . ."** The enemy has been forced to halt, but if he comes in with overwhelming strength, the platoon will withdraw according to plan.

10 **Another part of the detailed plan pays off.** Casualties are evacuated to the rear by helicopter to prevent interference with the mission.

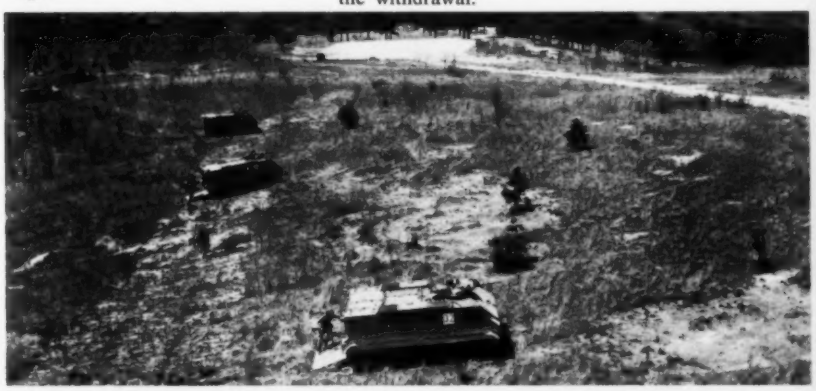
11 **". . . Roger — out. . . ."** After receiving permission to withdraw, the company commander orders withdrawal of platoons from the delay position.

12 **". . . get the lead out. . . ."** As planned, the first elements of the platoon (under the platoon sergeant) quickly pull back to covering positions to the rear.

13 **One last burst** and the crew-served weapons—the last ones out—move back under cover of the remainder of the platoon.

14 **Rallying points enhance control** as the platoon moves along predesignated routes to the rear . . .

15 **. . . as the carriers are mounted,** the caliber .50 machineguns overwatch the withdrawal.



16 **And after the carriers move into the new positions,** the story begins all over again—dig in . . . fight . . . and pull back to fight again. This is the story of the delay—trading space for time—until the space can be won again.

Military Justice

Recent Court decisions have modified or invalidated many of the rules and procedures with which we have long been familiar.

by CAPT WILLIAM P. TYSON JR.

IF YOU don't mind, we'd like to put you in the student's seat, for just a moment.

Pick up your pencil and see how many of these questions you can answer:

	TRUE	FALSE
An accused cannot be required to submit to a blood alcohol test or to submit handwriting or urine specimens for use in an investigation.	☐	☐
A convicted person may be freed upon review of his case if court members had access to the Manual for Courts-Martial during the trial.	☐	☐
You may cause any statement you obtain from the accused to be inadmissable in a court by telling the accused, before he makes a statement, that he need not say anything that will tend to incriminate or degrade him.	☐	☐

If you are like the average Infantry officer, it may come as somewhat of a surprise to you that the answers to all of these questions are true.

In fact, to anyone who has served on a court, preferred charges or served as an investigating officer, these answers may come as a surprise, for they represent a trend in military justice which has been developing (unnoticed by many of us) for several years.

The present trend is really one of continual change and evolution brought about chiefly as a result of decisions and opinions of The United States Court of Military Appeals, a three-judge civilian court created by Congress in 1950 to act as a "watchdog" over the administration of military justice in the armed services.

Over the past few years this Court has made numerous decisions which have modified or invalidated many of the military justice rules and procedures with which we have long been familiar. And while these decisions have not made the UCMJ or the Manual for Courts-Martial obsolete, they have had a strong impact upon the way these sources of law affect all of us.

COMMAND INFLUENCE

For example, the actions of some commanders have been the target of severe criticism by the Court of Military Appeals. A number of cases have been reversed because of what the court termed improper command influence. Since the very existence of the present Code and the Court of Military Appeals grew largely out of command abuses in World War II, it is understandable that the Court would react swiftly and decisively to correct any present day abuses.

Acting in this area, the Court is carrying out the mandates of Congress which has made it a crime for any person subject to the Code to attempt to coerce or, by any unauthorized means, influence the action of a court-martial or any other military tribunal or any member thereof, in reaching the findings or sentence in any case; the same applies to the actions of any convening, approving, or reviewing authority with respect to his judicial acts.

In watching over this aspect of military justice, the Court has been quick to reverse convictions in those cases where it appeared that the convening or higher authority had improperly interfered with or influenced the trial proceedings. This is particularly so where there were indications that the court-members, in arriving at their findings or sentence, were influenced more by the desires or policies of the convening or higher authority than by the evidence presented at the trial.

As examples, cases have been reversed where court-members were advised that they should adjudge the maximum sentence and that the convening authority, in acting on the sentence, would exercise any clemency he deemed warranted. Cases have also been reversed in the following instances: where the convening authority's displeasure with previous light sentences was brought to the attention of court-members; where court-members were advised that, because of the elaborate pretrial investigative and screening processes, a case would not be referred to trial unless the accused was guilty; and where the president of a special court-martial was replaced during a trial because the convening authority was displeased with rulings he had made against the prosecution.

Other cases were reversed because of improper influence exerted upon the convening authority: for example, where the convening authority referred cases to trial by general court-martial not because of his own independent, free choice in the matter, but because of departmental regulations or policies of a higher commander which prescribed that certain types of cases would be tried by general court-martial.

CONDUCT OF COURT-MEMBERS

The Court of Military Appeals has made similar important decisions regarding the conduct of court-members. You may recall that the Manual for Courts-Martial gives to the members of a court-martial, the jurors in a military trial, the privilege of questioning witnesses, a privilege not generally accorded jurors in civilian trials. The Court of Military Appeals has made it clear, however, that this privilege is one that must be exercised with extreme care. It has unhesitatingly reversed convictions when, in its opinion, court-members abused the privilege by assuming a partisan role in the proceedings.

Such abuse occurs when court-members indicate by the kind and character of questions they ask witnesses (especially the accused when he takes the stand) that they have abandoned their role of impartiality, predetermined the accused's guilt, and have joined forces with the prosecution in assuring a conviction. Control of this situation in a general court-martial is the responsibility of the law officer, whose role and powers in conducting trials is now comparable to those of a Federal judge. He is responsible for ensuring that the conduct of court-members as well as all other aspects of the trial remains within proper bounds. In controlling the asking of questions by court-members, he may, for example, require that they submit their questions to him in advance for a determination of propriety. Handling of the problem in a special court-martial trial is the responsibility of the president, who, in his dual role of judge and member of the jury, is responsible for seeing that

The actions of some commanders have been severely criticized by the Court.

On occasion, court-members have abandoned their role of impartiality. . . .

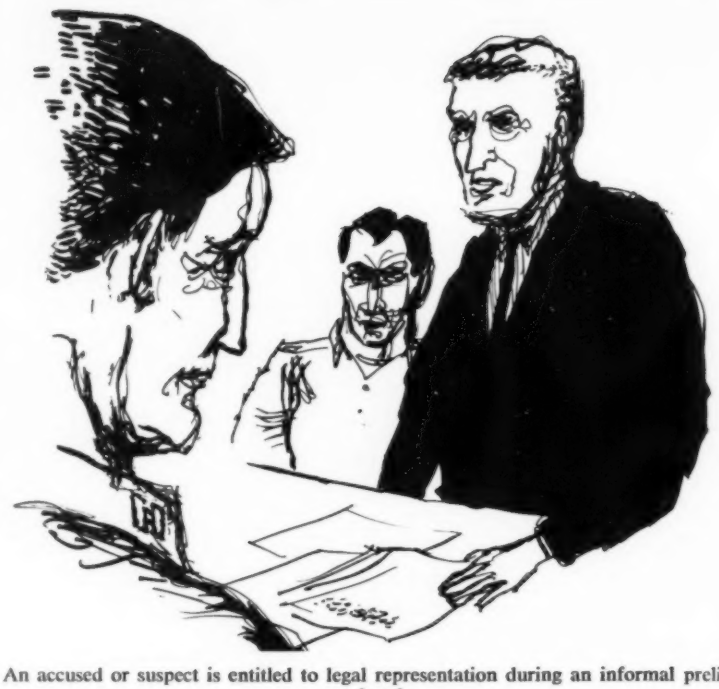
the trial is conducted fairly and in accordance with all legal requirements.

A significant innovation concerning the activities of court-members arose out of the *Boswell* and *Rinehart* cases, which laid down the rule that the members of a court-martial will not be permitted to have access to the Manual or any other legal reference materials during a trial. In laying down this rule, the Court pointed out that the practice of allowing court-members untrained in the law to use the Manual (many parts of which have been invalidated or modified by judicial and administrative interpretations) invited confusion and doubt, misinterpretations and misapplication of the law.

In the recent *Dobbs* case, the court re-emphasized its strong feelings with respect to this rule by reversing a conviction solely because the president of a *general court-martial* had in front of him, during open court only, a copy of the MCM. The Court took this action notwithstanding the fact that the president submitted an affidavit to the effect that the only time he opened the book was to consult the trial procedural guide.

Adherence to this rule on the MCM should pose little difficulty in a general court-martial trial where the law officer, in his judicial capacity, is the source of all the law which the fact-finding court-members need to know to decide the issues presented in the case. In special court-martial trials, however, adherence to the rule is more cumbersome. There, the president, in his judicial role, has to use the Manual in open court to conduct the proceedings properly, to rule on motions and objections, and to instruct the court-members, as required by the Code and the Manual, before the court closes to deliberate and vote on findings and sentence.

When the court goes into closed session to deliberate and vote, however, neither the president (who now assumes the role of jury foreman) nor any member of the court may have access to the Manual. If a question comes up during deliberations which the president cannot resolve without additional legal guidance, he must re-open the court, receive such guidance and then give any additional instructions required to the court-members in open court, in the presence of the accused and his counsel.



An accused or suspect is entitled to legal representation during an informal preliminary inquiry.

RIGHT TO LEGAL REPRESENTATION

Since the Court of Military Appeals touches on every aspect of military law, it was only natural that it would make several important rulings relative to the right to legal representation: In the *Gunnels* case, for instance, the Court laid down the rule that an accused or suspect is entitled to be represented by a lawyer during the informal preliminary inquiry which is conducted by the company commander whenever a member of his command is accused or suspected of committing an offense in violation of the Code. The same rule applies when the preliminary inquiry is conducted by military police or other law enforcement officials acting at the behest of military authorities.

While the person conducting the investigation does not have to volunteer to an accused or suspect the information that he is entitled to a lawyer, the individual must be advised properly in this regard once he indicates a desire for legal representation, and, furthermore, he must be given a reasonable opportunity to contact a lawyer. Failure to comply with these requirements is an open invitation to having any evidence obtained from the accused ruled inadmissible in any future court proceeding against him.

In other cases involving the right to legal representation, the Court has held that an accused is entitled to be represented by a lawyer at the *formal pretrial investigation* which must be conducted, pursuant to Article 32 of the Code, in every case which is being considered for trial by a general court-martial. Unlike the rule at the preliminary inquiry, the investigating officer must tell the accused that he has a right to be represented by a lawyer at this formal investigation—the military equivalent of a civilian grand jury proceeding.

In addition to the right to legal representation at the formal investigation, the accused is entitled to be confronted by, and to cross examine,

Decisions have been reversed where court-members had access to the manual during a trial.

all witnesses against him and to examine all evidence against him. Furthermore, the Court has held that the investigating officer cannot use unsworn statements of witnesses in conducting his investigation. The use of unsworn statements, failure to comply with the accused's right to legal representation, or denial of other of his substantial rights during the formal investigation have been held to be sufficient grounds for reversal of a conviction in a case later growing out of such investigation.

Lastly, with respect to the right to legal representation, the Court has held that an accused who is being tried by general court-martial must be represented at the trial by a lawyer, unless he elects to exercise his right to represent himself. No longer can an accused at a general court-martial elect to be represented by a person who is not a lawyer.

In each of the instances mentioned above, the accused may employ a civilian lawyer at his own expense, and he may have a military lawyer of his own selection, if reasonably available, at no cost to himself. If a military lawyer whom the accused selects is not reasonably available, another qualified lawyer who is reasonably available will be supplied to him.

PRIVILEGE AGAINST SELF-INCRIMINATION

Another significant area touched on by the Court of Military Appeals relates to self-incrimination. In this regard, the Court has repeatedly said that during the preliminary inquiry, the investigator, before questioning an accused or suspect, must comply fully with Article 31 of the Code—the military equivalent of the Fifth Amendment.

In complying with Article 31, the investigator must, in addition to reading the article to the accused or suspect, advise him of the nature of the accusation, of the fact that he has a right to remain silent and that anything he does say can be used against him in a trial by court-martial. As to the second aspect of this advice—the right to remain silent—*it is a violation of Article 31 to tell an accused or suspect that he need say nothing that would tend to incriminate or degrade him or "get him in trouble."* It must be made clear to him that he has a right to say absolutely nothing.

Many a case has been lost by the government because overzealous or careless investigators failed to comply with these requirements and thus obtained evidence from an accused which was later held inadmissible in court. Cases have also been lost because investigators violated other portions of Article 31 which prohibit the use of unlawful influence, coercion or duress in obtaining statements from an accused.

Examples of unlawful action which may render statements inadmissible include: depriving the accused of necessities and comforts of life such as food, drink, sleep and medical attention; prolonged questioning; refusing to let the accused attend to necessary body functions; physical violence or threats of violence; and promises of leniency.

In other cases involving Article 31 of the Code, the Court has held that the protection afforded by this article applies to physical actions of accused and suspected persons as well as to statements. Under decisions of the Court, the rule has been established that not only does an accused or suspect have a right to keep his voice silent during an investigation, but he also has a right to refrain from engaging in physical actions which might aid in the investigation against him:

CAPT WILLIAM P. TYSON joined the ERC in April 1944 and was called to active duty that same year. He was an Infantry rifleman with the 71st Division and later a finance clerk for both the 71st Division and 336th Finance Disbursing Section in Germany. In 1946 he returned to reserve status where he received his commission. Between 1952 and 1955 Captain Tyson served as Assistant Judge Advocate, Headquarters Fifth Army, and as Chief of the Military Justice Section, 25th Infantry Division, in Hawaii. Captain Tyson is presently an instructor in military law at the Infantry School.

An accused cannot be required to submit to blood alcohol tests.

for example, an accused cannot be required to submit to blood alcohol tests, to produce urine or handwriting specimens, or to speak for voice identification. It is illegal to order an accused to do any of these things, or to forcibly extract fluids or other matter from the accused's body for purposes of criminal investigation. It should be noted, however, that there is no present prohibition against fingerprinting or photographing a suspect or placing him in a lineup.

Finally, our discussion of Article 31 would be incomplete without mentioning the *Nowling* case in which the Court reversed a conviction of Wrongful Possession of An Unauthorized Pass because the military policeman who observed the accused off post—and suspected that he did not have an authorized pass—failed to advise the accused of his rights under Article 31 before asking the accused to show his pass.

Thus, from all of these decisions it is evident that the Court of Military Appeals is having (as it has in the past) a strong impact upon the administration of military justice. The points cited above are, of course, just a few indications of the extent of this impact.

HAVE WE GONE TOO FAR?

What is equally apparent is that military justice has traveled a long way since the World War II (and pre-World War II) conditions which brought about widespread criticism of the old system. And while occasional injustices may still occur in any system of justice administration, the Army can certainly take pride in the present overall fairness of its military justice system. Furthermore, it can welcome without qualm the critical eye of outside observers. Without a doubt, a military accused, surrounded by the elaborate safeguards which favor him before, during and after trial (including his rights to automatic review and appeal), stands a better chance of ultimately receiving justice than his civilian counterpart in most civilian jurisdictions. In fact, we may have gone too far in this direction.

There are many people of high stature in and out of the active military establishment who strongly feel that our present system of military justice, under the tutorship of the Court of Military Appeals, has traveled so far in preserving the rights of the individual that the rights and best interests of military society as a whole have suffered too greatly. Legal developments in civilian jurisdictions have, of course, received similar criticism.

As to the official attitude toward our present military justice system, the remarks of General Lyman L. Lemnitzer, Army Chief of Staff, may give some indication of where we stand. In an address before the 1959 Annual Conference of Army Judge Advocates held at The Judge Advocate General's School, General Lemnitzer said, " . . . I believe that the Army and the American people can take pride in the positive strides that have been made in the administration and application of military law under the Uniform Code of Military Justice. The Army today has achieved the highest state of discipline and good order in its history . . . ."

The present results, then, speak for themselves. What we must do now is continue this state of good order and discipline through added progress in our military justice system. At the same time we must continue to maintain a proper balance between the rights of the accused and the rights of the military establishment as a whole.

Only when we have done this will we have progressed to the point where military justice is a *double*-edged sword—tempered, true, and strong.

M-14

MANUAL OF ARMS

With adoption of the M14 rifle as a standard weapon for Infantrymen, several changes in the manual of arms have been made. These were found necessary because of the slight difference in configuration of the M14 from its predecessor, the M1.

For example, the M14 rifle has only half as much handling surface in the upper handguard area, thus limiting the sliding movements of the hand that are permitted by the M1. When the commands of "Parade Rest," "At Ease" or "Rest" are given to a soldier armed with the M14 rifle, the weapon rests against the right leg and along the seam of the trousers, as in the position of attention. The grasp of the rifle remains unchanged (Figure 1, below).

With a magazine inserted, Inspection Arms is accomplished by raising the weapon to the Port Arms position and pulling rearward on the operating rod handle with the right hand (Figure 2, above). When the bolt reaches its rearmost position, the magazine follower engages it and the right hand is then returned to the small of the stock. When performing this movement without a magazine contained in the weapon, the bolt is held in its rearward position by depressing the bolt lock with the right thumb.

Figure 1. "Parade Rest"

Figure 2. "Inspection Arms"

Since there is no stacking swivel on the M14, stacking of arms is accomplished by using the rifle sling. The stackmen are designated in the same manner as when armed with the M1. At the command "Prepare Slings," the stackmen adjust their sling keepers to form a 4-inch loop and then return to Order Arms. The muzzles of the rifles being stacked are inserted into the sling-loop of the stackman's rifle (Figure 3 above, right) when "Stack Arms" is given.

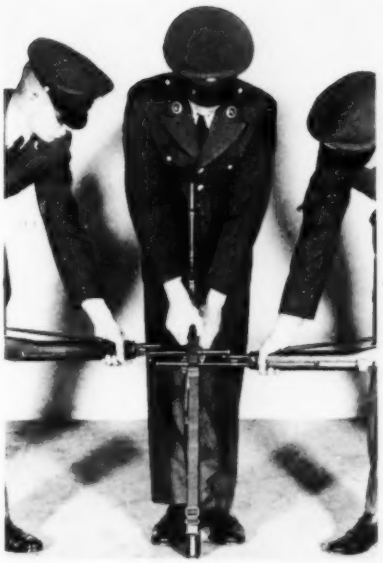


Figure 3. "Stack Arms"

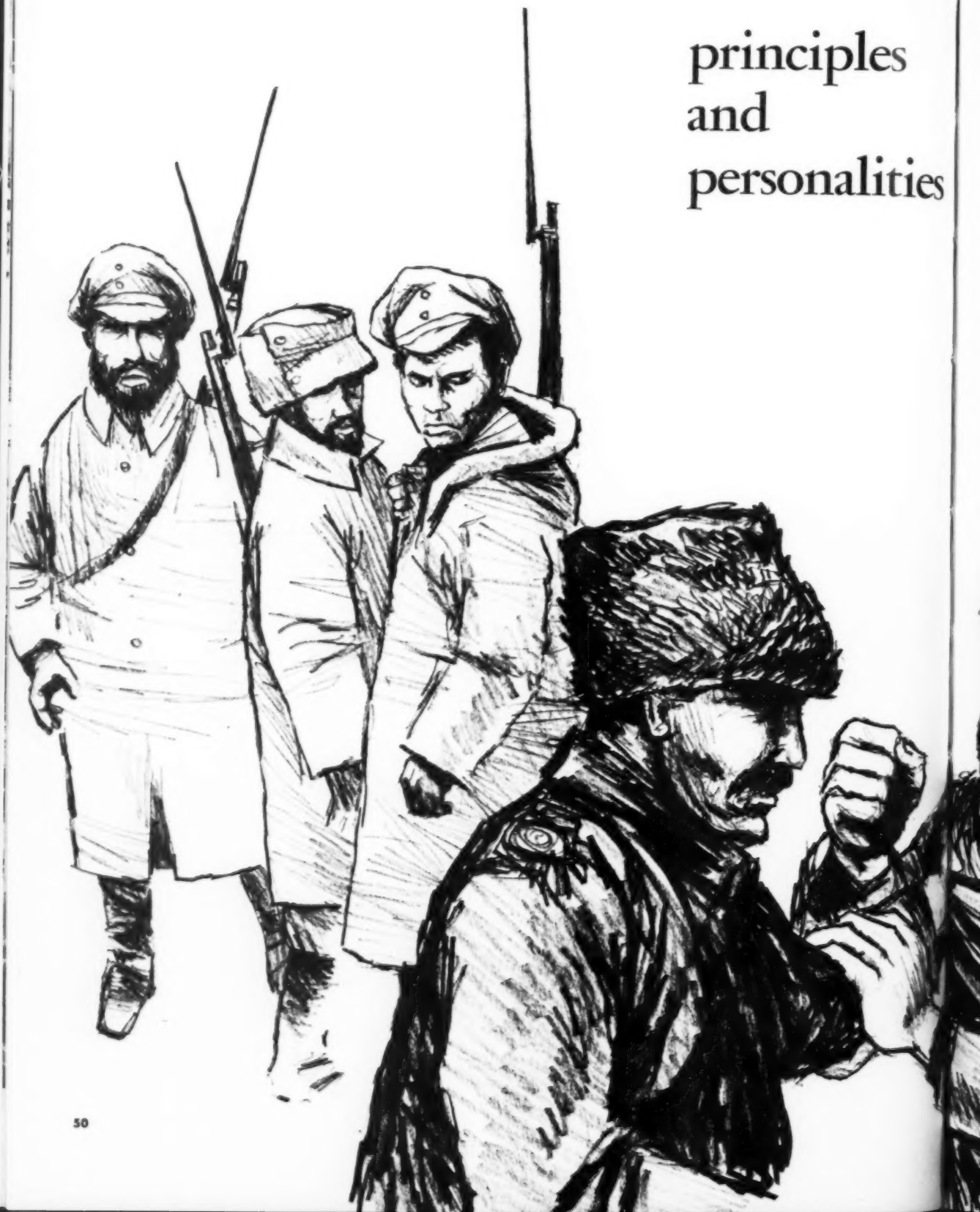
The stack is completed when the butts of the weapons being stacked are placed on the ground in a manner in which the rifles counterbalance each other and stand by themselves (Figure 4, below).

A change to Field Manual 22-5, *Drill and Ceremonies,* reflecting the manual of arms with the M14 rifle, has been prepared. This change will be published and distributed in the near future.

Figure 4. The completed stack

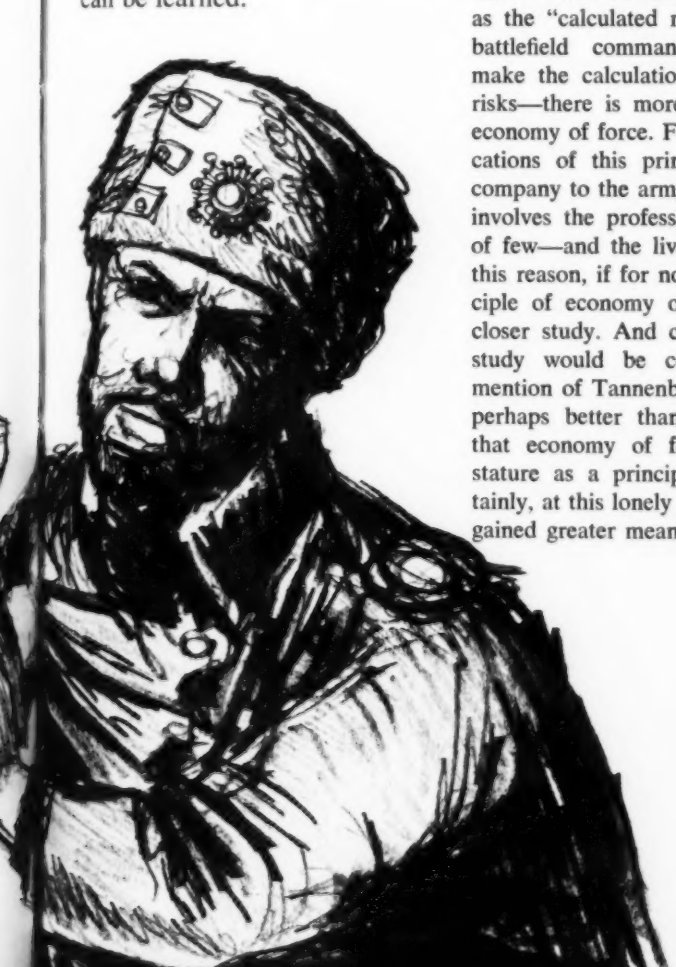
TANNENBERG

principles and personalities



by Lt Col William F. Long Jr.

The nine principles of war are simple, universal and enduring. Personalities, on the other hand, are complex, unique and transitory. The combination of these two—principles and personalities—is the story of war . . . a story from which much can be learned.



Perhaps one of the most misunderstood—and most dangerous—of all nine principles of war is that of economy of force. It is risk epitomized, since any proper application of this principle entails willing exposure of some elements in order to enhance the chance of overall victory.

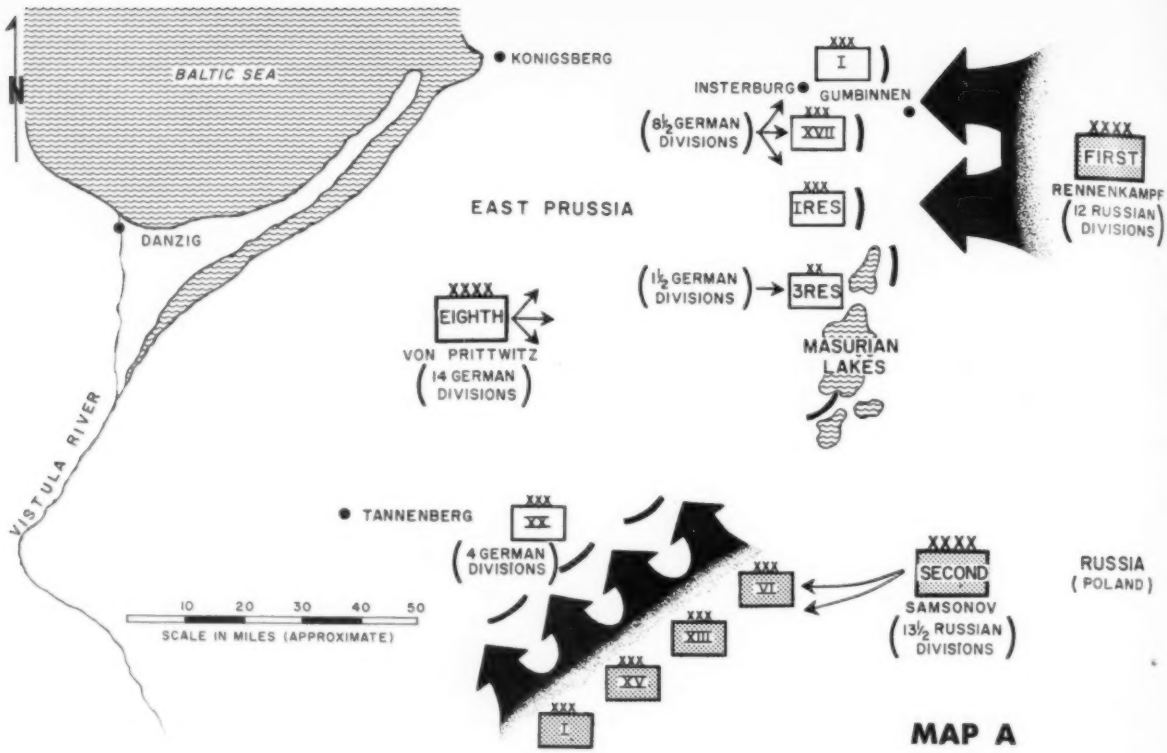
To the reader of military history this is often dramatically referred to as the "calculated risk." But to the battlefield commander—who must make the calculations and take the risks—there is more than drama in economy of force. For in most applications of this principle—from the company to the army group level—it involves the professional reputations of few—and the lives of many. For this reason, if for no other, the principle of economy of force deserves closer study. And certainly no such study would be complete without mention of Tannenberg. It was here, perhaps better than anywhere else, that economy of force gained full stature as a principle of war. Certainly, at this lonely Prussian town, it gained greater meaning.

Strangely enough, the story of Tannenberg began in a Mukden (Manchuria) railway station prior to World War I. Two of the principal actors in the Tannenberg tragedy-to-be engaged in a fist fight in the station over differences arising from the Russo-Japanese War. These actors were Paul Rennenkampf, later commander of the First Russian Army at Tannenberg, and Alexander Samsonov, later commander of the Second Russian Army.

The fact that Samson(ov) smote Paul—or vice versa—is well established. The motivation is not. Bad blood between these two dashing cavalrymen dated from an earlier battle in the Russo-Japanese War when Samsonov was forced to evacuate his defense because of unexplained inactivity of Rennenkampf's command. To make it worse, the competition of their careers led to further estrangements, and Tannenberg found these two old comrades (to use the term loosely) together again as adjacent commanders. This time they were separated only by the Masurian lakes and the animosities of a lifetime. And this distance—geographical and psychological—is probably the ultimate reason for their failure at Tannenberg.

Certainly these were two of the principal personalities at Tannenberg; however, there were others. On the German side of the fence—and facing Rennenkampf and Samsonov—were several German personalities: Von Prittwitz, Von Francois, Von Hindenburg, Ludendorff and Hoffman . . . but more about them later.

This was the cast at Tannenberg in 1914. It was an all-star cast with the hero—and the villain—still unknown at the beginning of the first act. When the curtain came up on this drama, the personalities were aligned as shown on Map A. Rennenkampf



MAP A

started the ball rolling when his First Russian Army of 12 divisions crossed the East Prussian border advancing through the Insterburg Gap toward Konigsberg. His mission was to attract German attention to the north and turn the line of the Masurian Lakes from the north. The Second Russian Army (13½ divisions) under Samsonov was to cross the East Prussian frontier and take the German lake line in the flank and rear by turning it from the south and west.

To meet this attack, German General Von Prittwitz had disposed his Eighth Army with 8½ divisions oriented north to meet Rennenkampf, 1½ divisions on the line of lakes and 4 divisions south and west of the lakes.

On the face of it, the German dispositions seemed well placed to meet the Russian attack. However, the headstrong and independent Von Francois, who commanded the northern German element, had deployed his force farther to the east than necessary. By doing this, he forced the tactical issue and badgered his reluctant boss, Von Prittwitz, into fighting a battle at Gumbinnen. Because of Prittwitz's indecisiveness and his unwillingness to gamble (he wanted only to delay at Gumbinnen) the Russians, who were badly disorganized in their offensive venture, were able to come off with a draw. German indecisiveness had saved them—for a time.

Hoffman . . . brilliant planner whose moral courage turned retreat into victory.

Meanwhile, down in the south, Samsonov's Second Russian Army was making better progress, and this further unnerved Von Prittwitz. Thus, when he received word that he was being outflanked by Samsonov, he panicked.

Prittwitz, never one to be bold, ordered an immediate break-off of the battle and gave orders to his Army to assume a defensive position behind the Vistula. He communicated this decision to his staff, his commanders and his boss (Von Moltke), all of whom were shocked at this rash decision which would sacrifice East Prussia.

Fortunately, Prittwitz was later dissuaded from this poor tactical decision by his operations officer, General Max Hoffman. It was Hoffman, intelligent, courageous and with deep professional insight, who convinced the shaky Prittwitz that he must fight another battle en route to the Vistula. To do otherwise, Hoffman convinced his boss, would be tantamount to disaster, since the Russian Second Army

was already closer to the Vistula than were the withdrawing German elements.

Essentially, Hoffman's plan envisioned use of a single cavalry division to delay Rennenkampf's First Russian Army while the I Corps and 3d Reserve Division moved by rail to assist XX Corps in the south in delaying Samsonov. This would then allow the XVII and I Reserve German Corps to withdraw in orderly fashion to the Vistula. Moreover, the plan included considerable flexibility in that the XVII and I Reserve Corps could be used to assist the delaying forces in the north (one cavalry division) or the south (XX Corps) if need be.

Prittwitz bought this plan, but, ironically, he failed to inform his boss (Moltke) of his change in plans. This is perhaps the most fateful failure to pass the word in history.

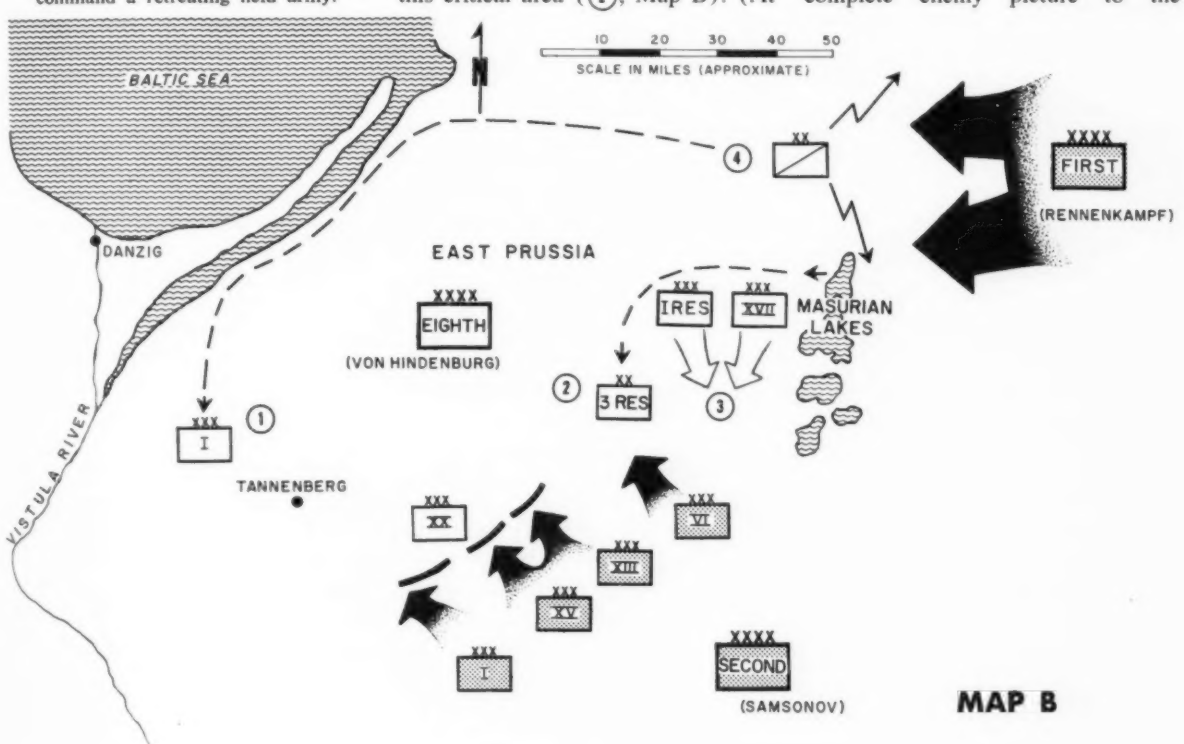
Moltke, thoroughly shaken by this time, jerked Prittwitz's suit and called Von Hindenburg from retirement to command the German Eighth Army. He also sent Von Ludendorff from the western front to become Hindenburg's chief of staff.

Thus the stage was set for Tannenberg . . . and the historic drama began to unfold. Using the remarkable web of rail lines in East Prussia, Von Francois' German I Corps was moved from the extreme north of the line to the extreme west (①, Map B). This was done to bolster the right flank of the hard-pressed XX Corps which was engaging the bulk of Samsonov's Second Russian Army. The German 3d Reserve Division was also moved to the south to assist XX Corps in this critical area (②, Map B). (At this point it should be noted that when Hindenburg-Ludendorff assumed control of the battle on 23 August, they accepted and used without exception the movements and dispositions initiated by the brilliant Hoffman.)

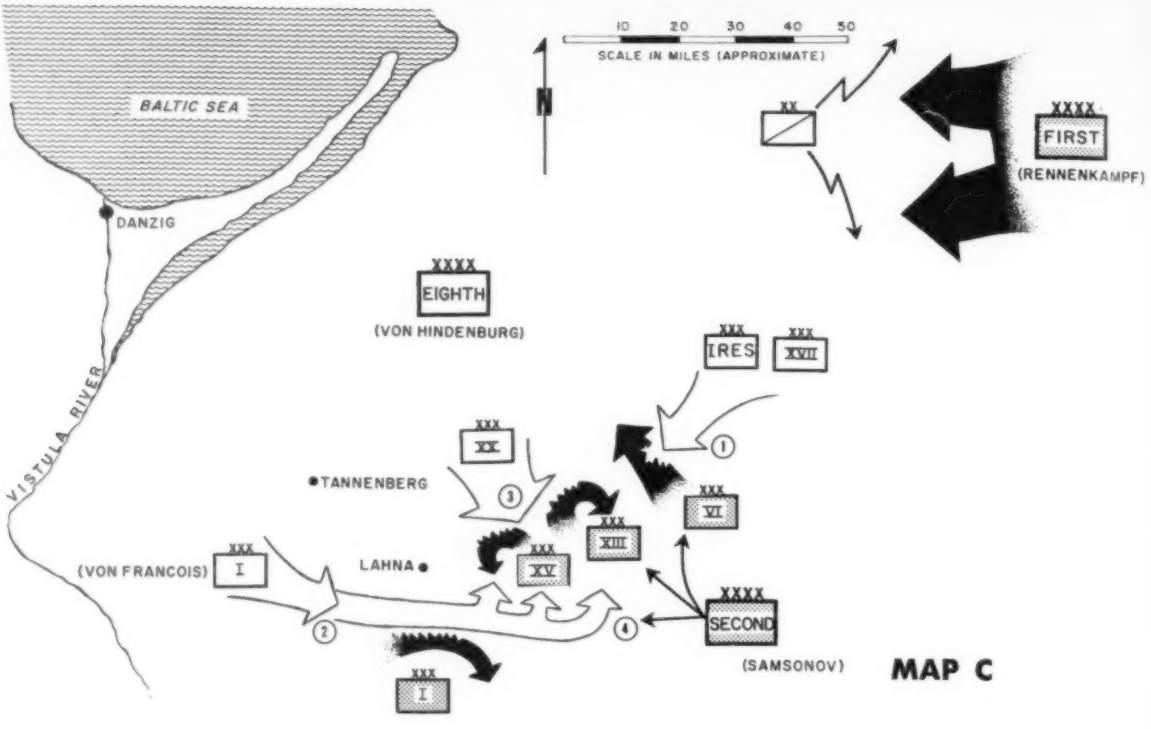
Hindenburg . . . came from retirement to command a retreating field army.

Ludendorff . . . prodded his commander into a counter-offensive.

As Samsonov's hot, weary, underfed and dispersed Second Russian Army pushed forward across the wasteland to trap the "fleeing" Germans, two Russian wireless messages (intercepted in the clear) gave the complete enemy picture to the



MAP B



Germans. Using this information (which confirmed a captured directive), Ludendorff dispatched the XVII and I Reserve Corps from the north to strike Samsonov's right flank (③, Map B).

This daring maneuver, which left only one German cavalry division (④, Map B) to oppose the entire Russian First Army, was certainly risk epitomized. But it was also this economy of force measure which enabled the Germans to shift the decisive weight of battle to the south. The Russian First Army Commander, Rennenkampf, true to form, failed to maintain contact with the Germans to his front or with Samsonov to the south. Instead, when the enemy evaporated to his front, he incorrectly assumed that he had won a great victory—and then rested on his laurels for a season, as it were. Certainly Rennenkampf's unwillingness to push forward aggressively enabled the Germans to pull off their daring maneuver. His inactivity further set off this chain of events:

On the 26th of August, the German XVII and I Reserve Corps smashed the Russian VI Corps, which was Samsonov's right flank unit (①, Map C). Since the Russians had again failed to use their cavalry (Rennenkampf had made the same mistake in the north), they were completely surprised and routed.

On the 27th, the Russian left flank corps (I Corps) was similarly routed by Von Francois' German I Corps (②, Map C). Despite this fact, Samsonov remained in an attack attitude and pushed his center (consisting of two corps) forward against the German XX Corps.

On the 28th, the German XX Corps launched a counter-offensive that eventually forced the entire Russian front into a disorderly retreat (③, Map C).

Thus it was that Samsonov, with four Russian Corps, found himself being defeated (piecemealed, as it were) by a numerically inferior German force. Indeed, Hoffman's brilliant plan and his economy of force measures in the north had paid great dividends.

But this was not the end of the battle. On 29 August, Von Francois, having deliberately disobeyed Ludendorff's orders to turn north toward Lahna, instead drove straight toward the east. In doing this, Von Francois personally engineered the destruction of the two remaining Russian Corps (the XV and the XIII Corps) by stretching his corps for 25 kilometers across the line of Samsonov's escape (④, Map C). Under repeated but uncoordinated attacks, Von Francois' thin line held and his corps alone accounted for 60,000 prisoners. This was the end of Samsonov's Second Russian Army.

On 30 August, amidst the wreckage of his army, Alexander Vasilevich Samsonov, physically exhausted and sick at heart, committed suicide.

By 31 August, it was all over. The German Eighth Army had won one of the classic battles of all history by using one of the smallest economy of force elements in modern war: one cavalry division opposing a field army.

Certainly there is much to be

learned from this classic battle: Rennenkampf's unwillingness to press forward and his poor use of reconnaissance elements gave the German forces excellent opportunity to carry out their daring plan.

Hoffman's moral courage, particularly in opposing the unwise decision of his commander, is also a significant factor in the story of the German victory.

Also, Samsonov erred in not maintaining a cohesive offensive force. Instead of keeping his elements together, he sent his flank corps off on isolated missions and allowed them to be defeated in detail. All of these contributed to the debacle at Tannenberg.

But the real lesson from this battle lies with the Germans' prudent use of economy of force. By gambling with a division against a field army, they were able to extricate themselves from a seemingly hopeless situation and turn it into a smashing victory. What is more important, they turned what could have been a disastrous retreat into an orderly withdrawal and, ultimately, a startling victory through counter-offensive.

There are perhaps other lessons that could be learned from an analysis of the battle at Tannenberg, but the above points seem to stand out.

For the Infantry commander, and particularly those at lower echelons, it may be difficult to visualize how this field army battle can have application at squad, platoon or battle group level—and yet the principles applied at Tannenberg *do* apply.

Certainly no squad should fail to maintain contact with units on its right and left (previous fist-fights notwithstanding). And by the same token, contact should be maintained with the enemy, and particularly a retreating enemy.

Certainly a company commander can readily see the risks in a maneuver such as Samsonov's. When platoons are sent helter-skelter on isolated missions (again without maintaining contact), they risk defeat in detail.

Lastly, any Infantry battle group commander may find himself faced with a choice similar to that handed Von Prittwitz. If he is a wise commander (or if he has a brilliant Hoffman to guide him), he may use this evasive principle—economy of force—by putting a company where two or three should be. In the retrograde (and in other operations) such risks may well be necessary.

The key to success in such situations is to do what Hoffman & Co. did: Understand your capabilities and those of the enemy; be bold; act with decisiveness. And lastly, do not throw in your hand as long as there is a chance of winning the game.

This is perhaps the best lesson to be learned from Tannenberg.

Lt Col William F. Long Jr., a 1942 OCS graduate, served in China during World War II. During the Korean War he was a battalion S3 and later regimental S3 of the 7th Infantry Regiment. Colonel Long received his B.A. from Otterbein College and has completed Military Intelligence School (Yale University), the Airborne Course, Associate Infantry Advanced Course, Associate Course, CGSC, and the Armed Forces Staff College. Colonel Long is currently assigned to Infantry Branch, OAD, Department of the Army.

LETTERS

(Continued from page 1)

category. We newly commissioned officers [are] presently attending IOBC 13 [the Infantry Officers Basic Course at Fort Benning]. While we know most newly commissioned officers need an orientation when reaching a training unit, we feel confident enough to do a more than adequate job as a Training Unit Leader. . . .

2d Lt Edward B. Scott
2d Lt George R. Casey
2d Lt John F. Shaw

Det 23, 2d Stu Bn
Fort Benning, Ga.

We didn't intend to start any minor revolutions, nor did we intend to cast aspersions on the need for lieutenants in training basics. What we did intend to point out was that there is a shortage of qualified cadre personnel—in quality and quantity—and when there is a disproportionate number of newly commissioned officers or untrained NCOs assigned to training units, the problem is magnified.

When there is a wealth of experienced officers and NCOs on hand, they can quickly give the new officer or NCO the added training which he may require. Therefore, what we need—and must get—is a proper balance *of experience among our cadre personnel. A proper combination of "old hands" and newly commissioned officers will, we think, produce the best results.* Ed.

A WORD FROM THE PROFESSIONALS

● . . . Your new ideas are intriguing. I'm sure the fold out on the new rifle [in the April-May issue] will produce a good reaction. It seems to me that this is one of those things that builds tremendous reader loyalty—an "extra" that is quite unexpected. . . .

I urge you to consider if you have gone a little too far in the use of drawings vs photos . . . also I think you should consider increasing the size and boldface of your captions. . . .

Charles S. Mill

Charles S. Mill
Publisher
Purchasing Week

As a matter of interest to readers, Mr. Mill and his staff gratuitously critique each issue of Infantry *giving us a page-by-page rundown on how we can improve your professional journal. It should also be mentioned that many of the recent changes in* Infantry *are a result of these friendly critiques, for which we are most grateful. With Mr. Mill's help and with the comments of readers, we hope to continue to improve.* Ed.

FROM BATTLE GROUP COMMANDERS

Infantry recently conducted a survey among approximately 100 Infantry battle group commanders (active and reserve BGs). The following are typical of their comments:

● . . . To [encourage] . . . further comments on articles, requests for specific articles, and suggestions for improvement of your magazine, I suggest a tear-out section at the rear of the magazine be devoted to this purpose so that all readers may be allowed the opportunity to comment on the magazine. . . .

Lt Col James C. Donaghey
2d Battle Group, 14th Infantry
Fort Benning, Ga.

Periodically (as in the April-May issue), we will include with each copy of the magazine a comment sheet for use by Infantry *readers so that we may be kept properly posted.* Ed.

● . . . If there is anything that can be done to make *Infantry* more vital, it is by publishing more of the controversial,

(Continued on page 70)

LOST PATROL

by 1st Lt Nathan C. Vail

This is the story of a lost patrol . . . It is a true story—and one worth remembering . . . .

It began on the morning of 24 March 1951, in Chunchon, Korea. A young lieutenant had been given a combat patrol mission for his platoon. After the battalion S2 had briefed him thoroughly regarding his objective—and had given him a map—the lieutenant rounded up his patrol and moved out.

It was 0700 when they departed.

After the first hour out, a report was received that the patrol had reached its first objective. No further word came through until approximately 1700 hours; at that time, the platoon leader reported that he was lost, but that he believed he could find his way back.

As darkness came, the regiment received no report of the patrol's progress. Contact was regained at 1930 when a searchlight was employed to spot a hill on the front to serve as a guide for the lost patrol. At 0400 on 25 March, the patrol finally returned to the company area.

It was subsequently determined that the patrol had wandered into the adjacent division zone. As a result, the platoon sergeant had been killed and several other men were casualties. The patrol leader later admitted that he was lost—and that he had been

unable to identify the terrain features on his map.

This was the story of the lost patrol.

The unfortunate part about the story is that it is not a fable—nor is it an isolated circumstance, as many combat after-action reports will testify. It has happened before and may well happen again.

To keep this type of incident from recurring and to better ground our soldiers in basic battlefield skills, the Army has given a "new look" to an old technique known as "land navigation." Basically, this technique enables a soldier to negotiate terrain effectively by use of a combination of dead reckoning and map terrain association. Essentially, land navigation is a common-sense approach to a very common problem—how to get from one position on the battlefield to another without becoming lost. Certainly this problem touches all echelons—from the messenger who must locate a distant CP to the battle group commander who leads his unit in an attack. For this reason, then, land navigation is a required skill for *every* soldier. At this juncture, some "old soldiers" might argue that we have been teaching soldiers how to "land navigate" for decades. This is true; however, to my mind, at least, we have never taken the practical, down-to-earth approach that we are now taking with this problem.

Where we formerly taught basic soldiers a mountain of map-reading trivia (again, my opinion), we are now teaching them a technique that they can and will use on the battlefield. Reflect, for a moment, on how many times you have used (outside of a classroom) the map-reading knowledge which you acquired. (Has anyone asked you lately about your Isogonic Lines? How many times since basic training have you had to find your location on a photomap? Have you been able to inject "Universal Transverse Mercator Projection" into many conversations? And have you ever found use for geographic coordinates on the battlefield?)

In map terrain association, soldiers guide on terrain features or check points selected in advance from a map.

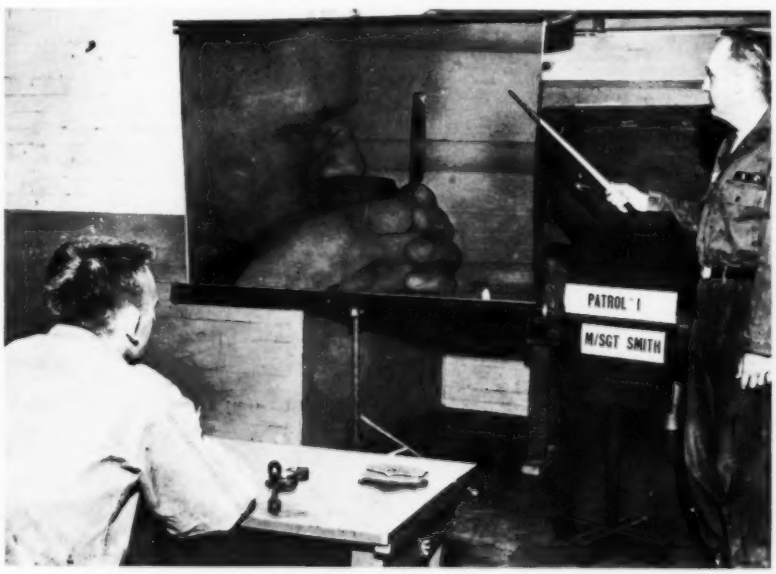
I thought not. To look at another side of this question, how many times have you (or men in your unit) had to move across the battlefield on one of these missions:

- Carrying messages
- Reconnaissance of an area
- Repairing wire communications
- Evacuating prisoners or casualties
- Patrol operations
- Attack of an enemy position

These are typical missions which most soldiers perform. They require certain basic knowledge—not extensive book-type knowledge, but just enough know-how to get from point A to point B. And this is what land navigation accomplishes.

While we mentioned earlier that land navigation includes a combination of dead reckoning and map terrain association, these terms are not entirely descriptive, and they deserve another word or two.

Proper use of the compass is emphasized in basic combat training.



In land navigation training, soldiers are taught techniques which can and will be used on the battlefield.

Dead reckoning is a means of maintaining direction by use of a compass and by determination of distance by pacing. It is used most often in periods of limited visibility or in terrain where there are few landmarks or terrain features to guide on (e.g., in the desert).

For an example of dead reckoning on the battlefield, let's go down to Delta Company of the 18th Infantry. They are now in the defense and the first platoon has a simple need that can be filled only by a qualified "dead reckoner." They require more machinegun ammunition and rations. Inasmuch as the area between the company CP and the first platoon has few identifiable landmarks, and since visibility is poor, dead reckoning must be used.

The executive officer would give the order to one of the company NCOs: "The first platoon is on a small hill 800 meters from our position on an azimuth of 125 degrees. They require a resupply of ammunition and rations. As you can see from this map, there are no distinctive landmarks between here and the first platoon. I want you to lead the resupply party and report to me when you return."

This is the order and the designated NCO could carry it out without great difficulty. Since he knew what his pace was for 100 meters (and every soldier should know this), he could readily determine how many of his paces would bring him to his objective. The azimuth, in this case, was no problem since there are no obstacles to be bypassed en route to the objective and a direct reading could be taken. This is dead reckoning.

Map terrain association is a horse of another color. Let's assume that the terrain between the CP and the first platoon had several prominent terrain features, and the route to the objective was a twisting, turning one which would make use of a compass highly difficult. In this case the executive officer's order would sound like this: "I want you to lead a resupply party . . . We are now here (pointing to a map). If you follow the valley to our front, you will run into a steep ridge. Go around it to the right and you will cross an unimproved road. Follow this road until you cross a bridge, then turn left and follow the ridge line on your right. In a few minutes, this will bring you to the first platoon position. It is located here on the map." In this case, the NCO could make a few notes and, if he couldn't carry the map with him, he would draw a sketch of the route. By guiding on terrain features or check points selected in advance from a map, he would be using "pure" map terrain association. Of course, this method is most effective during good visibility and in areas rich in terrain features.

When dead reckoning and map terrain association are combined, we have land navigation. In this instance, the mission would be accomplished by using the map, an azimuth, pacing and prominent terrain features. Dead reckoning would be the principal method employed while map terrain association would aid in cancelling errors of dead reckoning which may have occurred.

On the surface, then, the process is not complicated nor is it revolutionary. What is significant is that we are now teaching—and emphasizing—how to navigate by using these tools. We are now teaching soldiers down-to-earth techniques which they will use on the battlefield.

Some of these techniques are new, some old—but all are of interest. As an example, basic trainees are now taught how to determine what their pace is over 100 meters of easy ground; they also determine their pace over moderate and rough ground, and record and keep this data in their wallet for their pacing record over the three types of ground. It is emphasized to the trainees that certain conditions will shorten the normal pace. These conditions might be when walking is difficult (heavy underbrush, sand, mud, snow, ice, rain, strong headwind, heavy clothing, uphill, etc.); when steering is

LT NATHAN C. VAIL enlisted in the Army at Fort Jackson in 1953. In 1954 he was an instructor in the Third Army Leadership School. After receiving his commission from OCS in 1955, he attended the Airborne Course and was then assigned to the 511th Airborne Infantry Regiment, 11th Airborne Division. While in Europe, he was with the Seventh U.S. Army NCO Academy. Lieutenant Vail has also served as a platoon leader with the 505th Airborne Battle Group, 11th Airborne Division, and later was with the G2 Section of the 24th Infantry Division. Upon his return from Germany, he attended Jumpmaster School at Fort Benning. He is presently an instructor with the Map Reading Committee, Special Subjects Department, at the Infantry School.

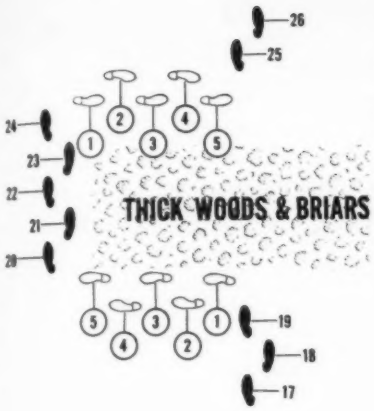


Figure 1. When steering marks are absent on the far side of an obstacle, side-steps must be counted separately.

difficult (at night or during limited visibility); and when tired. All of these will shorten the normal pace.

Trainees are also taught several tricks in the technique of pacing. For instance, when a soldier is moving on an azimuth and he runs into an obstacle, he will have to detour. In the absence of steering marks on the other side of the obstacle, he must count sidesteps separately (Figure 1). When a steering mark can be observed on the other side of the obstacle, only the forward steps are counted (Figure 2).

With regard to steering marks,

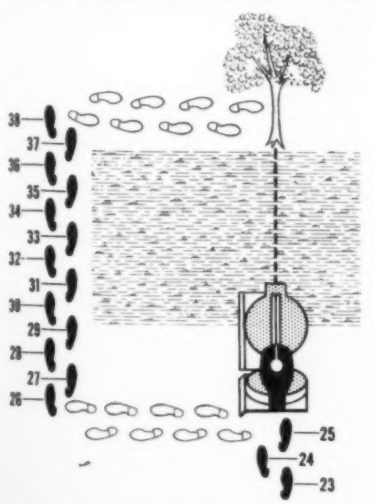


Figure 2. When steering marks can be observed, only forward steps are counted.

soldiers are taught to pick well-defined objects (a tree, rock, etc.) rather than an undefinable general area. They are also taught to choose marks at night which can be seen against the skyline. As a major part of this training, soldiers are taught (and practice) the proper use of the compass.

Some of the other "pearls" which are passed to land navigation students are these:

- "Most people tend to drift to the right when travelling on an azimuth." (A real pearl to keep in mind.)
- "To detour a minor obstacle which blocks your line of sight to a steering mark, sidestep until a steering mark is available on the azimuth . . . upon reaching the steering mark . . . sidestep back to the original course."
- (With regard to a map) "A valley's contours, V's, open out toward low ground pouring water into a main stream." "The open ends of a ridge's contours, U's, point toward the high ground."
- "One meter = 39.37 inches = 1.094 yard" (Don't forget it.)
- "Mentally keep track of the type of terrain through which you are passing. This is important."
- "The dullness of the glass [in the compass] is sometimes caused by moisture condensation . . . this can be eliminated by placing the compass in the sun to dry the glass. Other cases of dullness are not caused by moisture . . . such compasses cannot be read in the dark . . ."
- "If condensation [in the compass] does occur, it can be removed by applying friction to the glass by rubbing or [by] subjecting the compass to a short period of low heat."
- "Some common items of equipment that will attract the magnetic bar [in a compass] are your helmet and rifle. The minimum safe distance for these items is one yard."

Trainees are taught that steering marks must be well-defined.

These are just some of the points which trainees learn in the 12-hour Land Navigation Course for basic combat training. When these points are added to the fundamentals of land navigation, the soldier becomes truly proficient. It is worthy of note that this program of training was just initiated for BCT in February 1960, and the initial response has been extremely favorable.

Thus, the entire subject of land navigation has been given a new lease on life. As you can understand, there is nothing radically new or startling except for the emphasis and the training techniques. What is equally significant is that we are now teaching this technique to all of our basic soldiers. Of course, it is anticipated that many TOE units will also want to incorporate land navigation in their future training programs. The end result should certainly be a more proficient soldier with a greater capacity for moving on the battlefield, and this is all to the good.

If land navigation training contributes at all toward preventing any more "lost patrols" (as it well should), then we can consider the program an unqualified success.

THE PLAN

BRAVO ATTACKS

Captain Bravo, now commanding Company B, has only a limited amount of time (and particularly daylight) in which to effect the necessary coordination, conduct a reconnaissance, plan his attack and issue an order; therefore, he must make maximum use of his available time. He first coordinates with the BG S3 on the attachments, which are effective immediately. The S3 advises him that the attached elements will join Co B in the assembly area. The tank platoon leader has already reported in. Coordination will also be made with the commanders of Co A and C to exchange tentative plans.

The FOs will of course coordinate with the BG FSC to obtain information on artillery and heavy mortar fires. This data will consist of that portion of the BG fire support plan which is available. More detailed information concerning this fire plan will be obtained later, after all company fire requests have been submitted to the fire support coordinator. Next, Captain Bravo coordinates with the commander of Troop A, 2d Reconnaissance Squadron, to obtain information on the forward limits of reconnaissance, any additional enemy information, location of Troop A's elements and arrangements for passage through this unit. Insofar as practicable, Captain Bravo completes all of this coordination at the BG CP immediately after issuance of the attack order.

With coordination complete, Captain Bravo sends the following warning order to his XO: "Company B attacks at 0600 tomorrow morning. Platoon leaders meet me at Hill 525 (Grid 1380) at 1645 hours to receive attack order." He plans to issue his order to his platoon leaders and forward observers at a concealed location on Hill 525. By specifying in the warning order for what purpose platoon leaders are to meet him, Captain Bravo is assured that they will bring the necessary personnel to assist them in their planning. Prior to send-

ing this order, he uses the backward planning sequence in evolving a plan for use of available time. This is done to provide subordinates (and himself) with sufficient daylight in which to make their reconnaissance. To make best use of the limited time, Captain Bravo also plans for Lt Bates to reconnoiter for position areas for the weapons of the weapons platoon and the attached assault weapon squads.

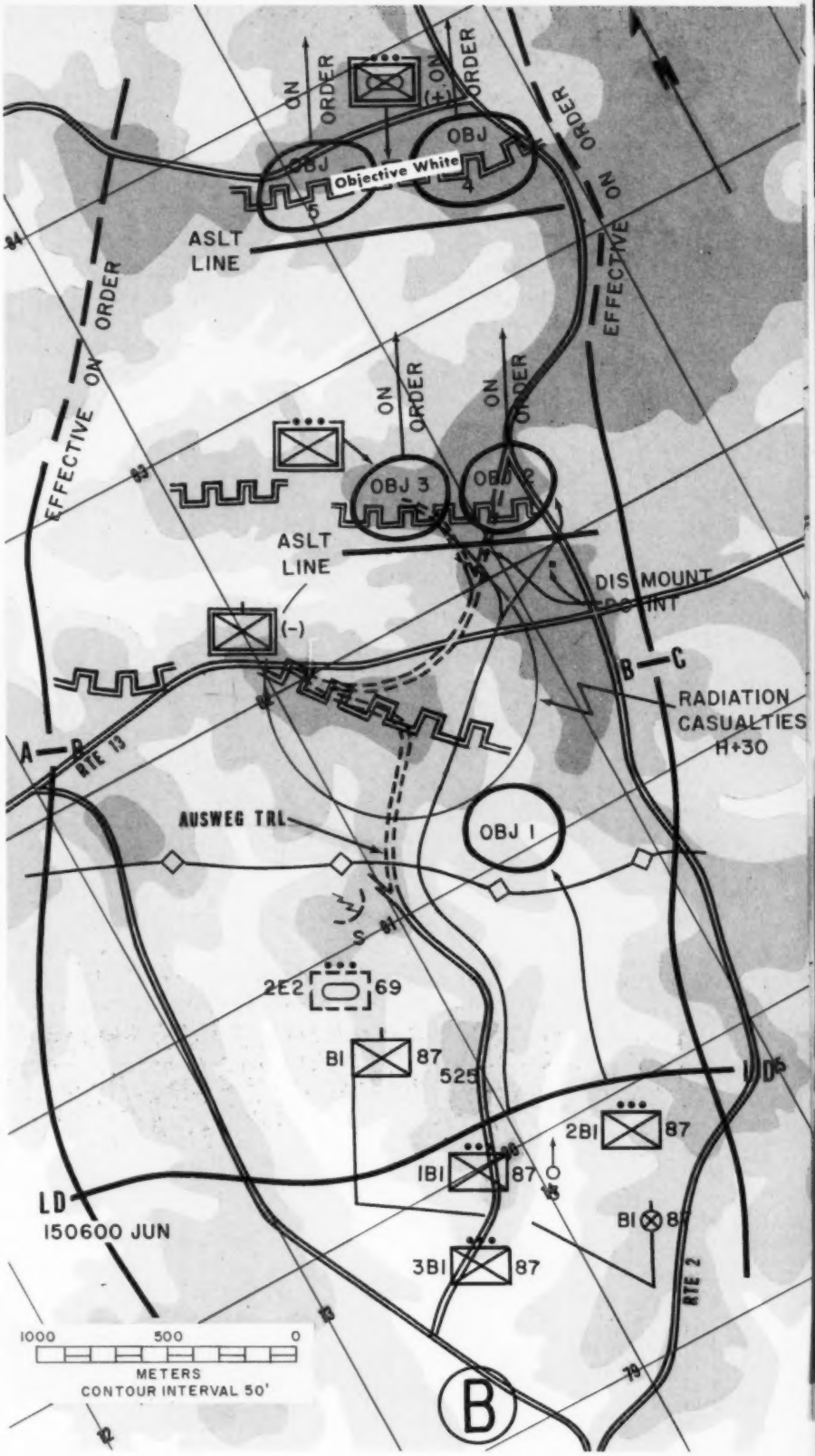
With the information he received from personnel with whom he had coordinated, and after a consideration of the mission, enemy situation and possible courses of action, Captain Bravo prepares a tentative scheme of maneuver. He further expands this scheme, during his reconnaissance, by making a continuing estimate of the situation — rejecting, altering and adopting appropriate portions of his tentative scheme of maneuver.

Company B's plan of attack will of course include the scheme of maneuver and the fire support plan. Recalling the mission—"Seize Objective White, be prepared to continue the attack on order," Captain Bravo analyzes Objective White first and ticks off some of the possibilities:

The size of Objective White and the strength of the enemy occupying this objective make it undesirable to attack with one platoon, retaining two platoons in reserve. This formation is used when the enemy situation is vague or when the approaches to the assigned objective prevent the use of more than one platoon in the attacking echelon.

Three platoons in the attack provide maximum firepower to the front; however, this deprives Captain Bravo of a reserve. The size of the objective and the enemy forces thereon do not justify an attack with all three platoons.

The use of two platoons in the attack with one in reserve provides for sufficient firepower to the front, and at the same time provides a reserve for use to influence the action. This seems to fit the bill in this situation, so Captain Bravo subdivides the



company objective into two platoon objectives and further designates a tentative assault line to ensure a coordinated attack (Map B). Based on the recommendations of the tank platoon leader, Captain Bravo will employ the attached tank platoon with his Infantry for the assault of Objective White.

Captain Bravo recognizes that the company must seize the ground which will enable it to get into a position from which an assault may be launched on Objective White. The prepared position extending west of Route #2, along the ridge north of Route #13, controls a major portion of the company zone and is occupied by a rifle platoon. Captain Bravo designates this position as an intermediate company objective. Based on the extent of this position and the enemy force thereon, he plans to employ two rifle platoons and the tank platoon in the seizure of this position. He subdivides the objective into two platoon objectives (2 and 3) and again designates a tentative assault line to ensure a coordinated attack (Map B and Figure 1).

The antitank obstacle will not permit an initial mounted attack. In view of this, Captain Bravo decides to attack initially with one dismounted platoon to penetrate the enemy defenses (including the antitank obstacle), and then continue the attack with two platoons (mechanized) plus the tank platoon, to seize the intermediate objective. In arriving at his decision, Captain Bravo considered two courses of action:

(1) Attack initially from the LD with two platoons—one in the right portion of the company zone, the other in the left portion. This formation provides two chances for success and permits coverage of a large portion of the company zone of action. Furthermore, this formation places Company B in a position to converge on the intermediate objective. This formation, however, separates the elements of the attack echelon by over 800 meters and thus creates a problem of control since the initial attack would be dismounted. Reaction time to shift the reserve from one flank to another would also be too long. (This course was discarded.)

(2) Attack initially with one platoon in the right portion of the company zone or, alternatively, in the left portion of the zone; then continue the attack in column with two platoons (mechanized) and the tank platoon, through the contaminated area, to seize the intermediate objective. This method of attack provides greater flexibility and depth for maintaining the momentum of the attack once launched. As soon as the antitank obstacle has been penetrated (preferably near Objective 1), the platoon covers while engineers prepare another gap (farther to the west) for the Infantry-tank team. The best place for the second gap appears to be in the vicinity of Ausweg Trail (right portion of the company zone). This will permit rapid exploitation of the penetration and take maximum advantage of the results of the nuclear weapon. (This course was selected.)

The attack, thus launched, also gains advantageous terrain early in the attack which will permit maximum utilization of the Infantry-tank team over the best avenue of approach to the intermediate and company objectives. If the attack were to be launched in the left portion of the company zone, adequate neutralization of enemy positions would be doubtful due to limited firing positions for direct fire weapons. Furthermore, the attack echelon would not be able to gain terrain from which it could effectively cover the breaching operation. All of these factors prompt Captain Bravo's decision to use course of action #2.

To exercise control in the conduct of the attack, Captain Bravo uses a number of measures, including the selection of a terrain objective (1) on the enemy side of the antitank obstacle. Although it is desirable to permit maximum freedom to the attacking platoons (especially when following a nuclear preparation), Captain

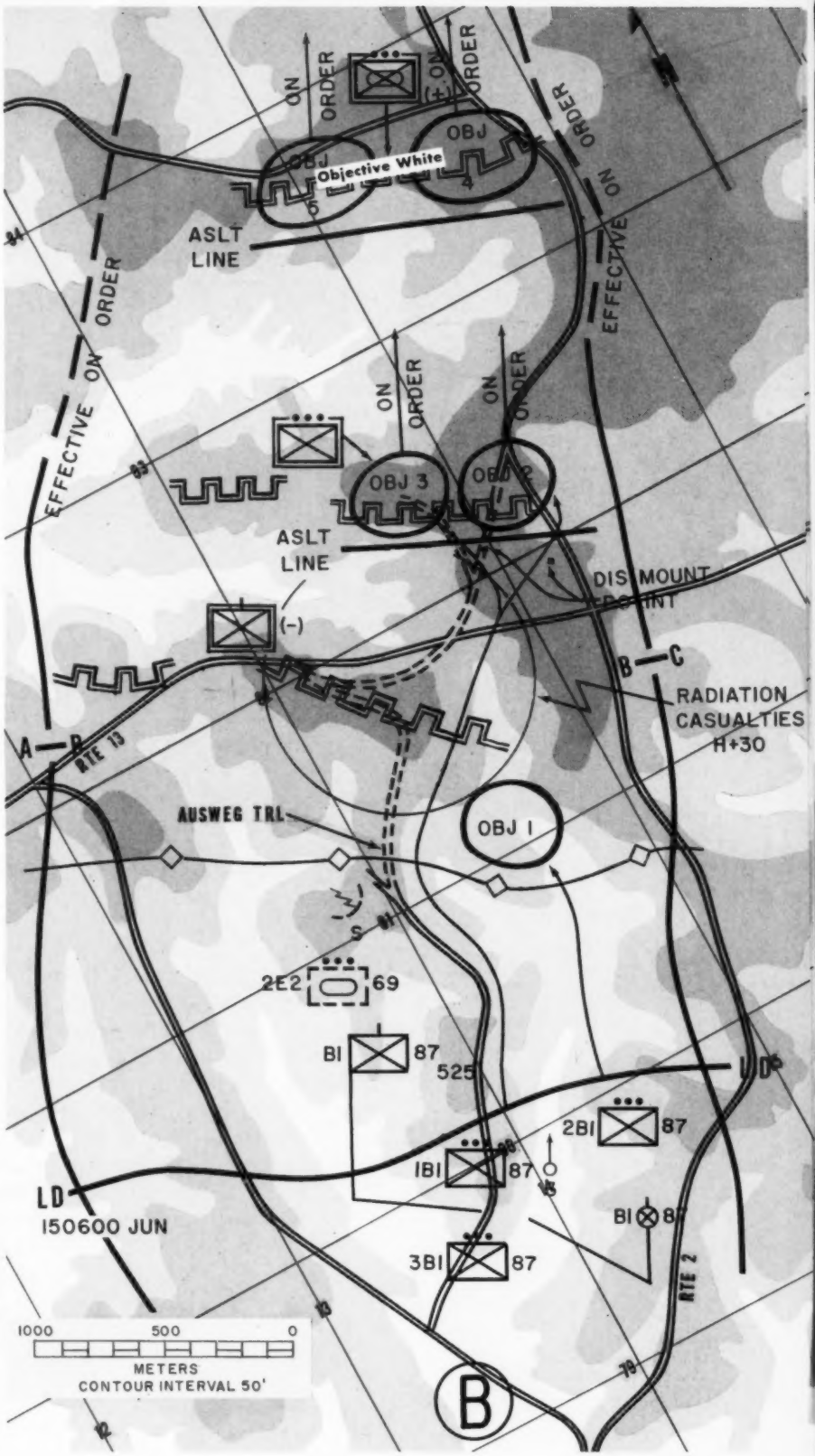
Figure 1.

Bravo felt it necessary to closely control the initial attack.

In order to realize maximum advantage from the nuclear weapon, the attack should progress as rapidly as possible. To provide for this rapidity of movement and in order to closely coordinate the movement of the attacking platoons with the supporting fires, Captain Bravo assigns a direction of attack to the platoon breaching the obstacle. Additionally, he assigns a direction of attack to the two mechanized platoons and the tank platoon to provide for their safe movement through the contaminated area and to effect a coordinated attack of Objectives 2 and 3. After Objectives 2 and 3 have been seized, Captain Bravo will assign zones of action (rather than a direction of attack) to the attacking platoons, since the need for such close control and coordination between maneuver and fire support elements will not exist.

The assignment of objectives is in itself a control measure. Objective 1 provides for the initial penetration of the obstacle. The designation of an intermediate objective (north of the area of induced radiation) and its subdivision into two platoon objectives provides for the seizure of terrain which will assist in the attack of the company objective (Objective White). Next, the designation of Objectives 4 and 5 provides for the seizure of Objective White.

As a further control measure, Captain Bravo selects a tentative assault line for the attack of Objectives 2 and 3 and Objectives 4 and 5 since both of these will be coordinated attacks. Finally, Captain Bravo selects a dismount area, south of the assault line for Objectives 2 and 3, where the attack echelon will dismount from the carriers. In selecting the dismount area, Captain Bravo estimates how far forward the attack echelon can move while mounted before becoming vulnerable to enemy tanks or antitank guns. In doing this, he considers the protection afforded by the attached tanks, supporting fires (including time fire over the advancing carriers), the



terrain and the effects of nuclear weapons on enemy defensive positions. Of course, the dismount area selected during the planning stage of the attack is only a tentative location, and it may be changed during the conduct of the attack, or not used. Captain Bravo plans to select a dismount area for the assault of Objectives 4 and 5 after the intermediate objective has been seized.

He will not use an attack position unless it becomes necessary. Although using an attack position may ease the coordination and timing of the attack, occupation of such an area would unduly expose the attacking elements to enemy fires, both nuclear and nonnuclear. Preparations for the attack will therefore be accomplished in the assembly area, and the attack formation will be assumed in the movement forward, prior to crossing the line of departure.

Captain Bravo gave considerable thought to the missions he would assign his platoons. He decides to take advantage of Sergeant Davis' combat experience and assigns him (and the 2d Platoon) this mission: "Attack along direction of attack indicated and seize Objective 1; be prepared to assist in seizure of Objective 3 on order; protect east (right) flank; on order move to vicinity Objective 2."

The mechanized attack is the key to the entire operation, so Captain Bravo decides to capitalize on Lt Slavins' initiative and aggressiveness in this venture; he assigns the 1st Platoon this mission: "Attack (mechanized) along direction of attack indicated to seize Objective 2; on order continue the attack to seize Objective 4."

The 3d Platoon (under Lt Carter) should have a reasonably easy job, particularly with Lt Slavins' 1st Platoon leading and acting as base platoon. The 3d Platoon will attack (mechanized) along direction of attack indicated to seize Objective 3; on order it will continue the attack to seize Objective 5.

The tanks of the attached tank platoon are initially retained under the company commander's control. On the recommendation of the tank platoon leader, Captain Bravo assigns initial targets (and positions south of the antitank obstacle) to the tank platoon. Designation of initial positions and targets permits neutralizing fire to be placed on enemy positions which can affect the progress of the 2d Platoon and the obstacle-breaching operation. As the attack of the 2d Platoon progresses or enemy positions become ineffective, fires will be shifted to subsequent targets.

Of course, this brings up the question of how Captain Bravo will use his tanks in the rest of the attack. As soon as the engineers have cleared a sufficient part of the antitank obstacle to allow passage of the tanks and carriers, the tanks will become part of an Infantry-tank team to seize Objectives 2 and 3 and Objective White. Since Captain Bravo considers the best approach to Objectives 2 and 3 to be the high ground along the east (right) flank, his scheme of maneuver is to attack Objective 2 from the east with one platoon of Infantry and the tanks. The tanks (leading) will sweep Objective 2 and join the 3d Platoon in the attack of Objective 3. Captain Bravo tentatively plans to conduct the attack of Objective White in the same manner, with the tanks continuing to take advantage of the high ground to the east and striking Objectives 4 and 5 on the flank as they precede the Infantry in the attack.

The considerations affecting utilization of the tanks will apply to the 106mm rifles and the assault weapons as well. Although the primary mission of these weapons is antitank defense, they are ideally suited for firing on known enemy positions which may not be seriously affected by the nuclear detonation. If it develops that these positions have been rendered ineffective by the nuclear detonation, fires can be shifted to other targets. Captain Bravo plans to employ his antitank weapons in a general support role from positions south of the antitank obstacle. After the mechanized elements clear the obstacle, he plans to displace the AT weapons forward to ensure continued direct fire support on Objectives 2 and 3. From positions in the vicinity of Objectives 2 and 3, these weapons will support the attack on Objectives 4 and 5 and also provide antitank protection to the east (right) flank.

Captain Bravo employs his 81mm Mortar Section from one location and in general support. In this manner he facilitates control, ammunition resupply and the massing of fires. Initial fires are, of course, planned on enemy positions beyond the effects of the nuclear weapon. During the breaching operation, Captain Bravo plans for the 81mm Mortar Section to fire smoke on the enemy positions along Route ±13 to screen the actions of the 2d Platoon and the engineers. Fire support is also given to the 2d Platoon seizing Objective 1 and to the 1st and 3d Platoons seizing Objectives 2 and 3. After Objectives 2 and 3 have been secured, the 81mm Mortar Section will displace, by echelon, to support the continuation of the attack.

In planning heavy mortar and artillery fires to support the scheme of maneuver, Captain Bravo is concerned initially with smoke to screen enemy observation from the company objective and smoke and HE on Objectives 2 and 3 to keep the enemy pinned down and to screen the initial movement of Infantry and tanks. For ease of control, the fires on the west (left) portion of the company objectives will be provided by Company B's 81mm mortars. The remaining fires will be provided by the Heavy Mortar Platoon and the artillery battalion in direct support. The use of smoke is closely coordinated with adjacent units and is controlled to ensure the continued and effective delivery of flat-trajectory fires. Additional concentrations are planned (to be delivered on call) on likely areas to facilitate the rapid delivery of supporting fires once the continuation of the attack has begun.

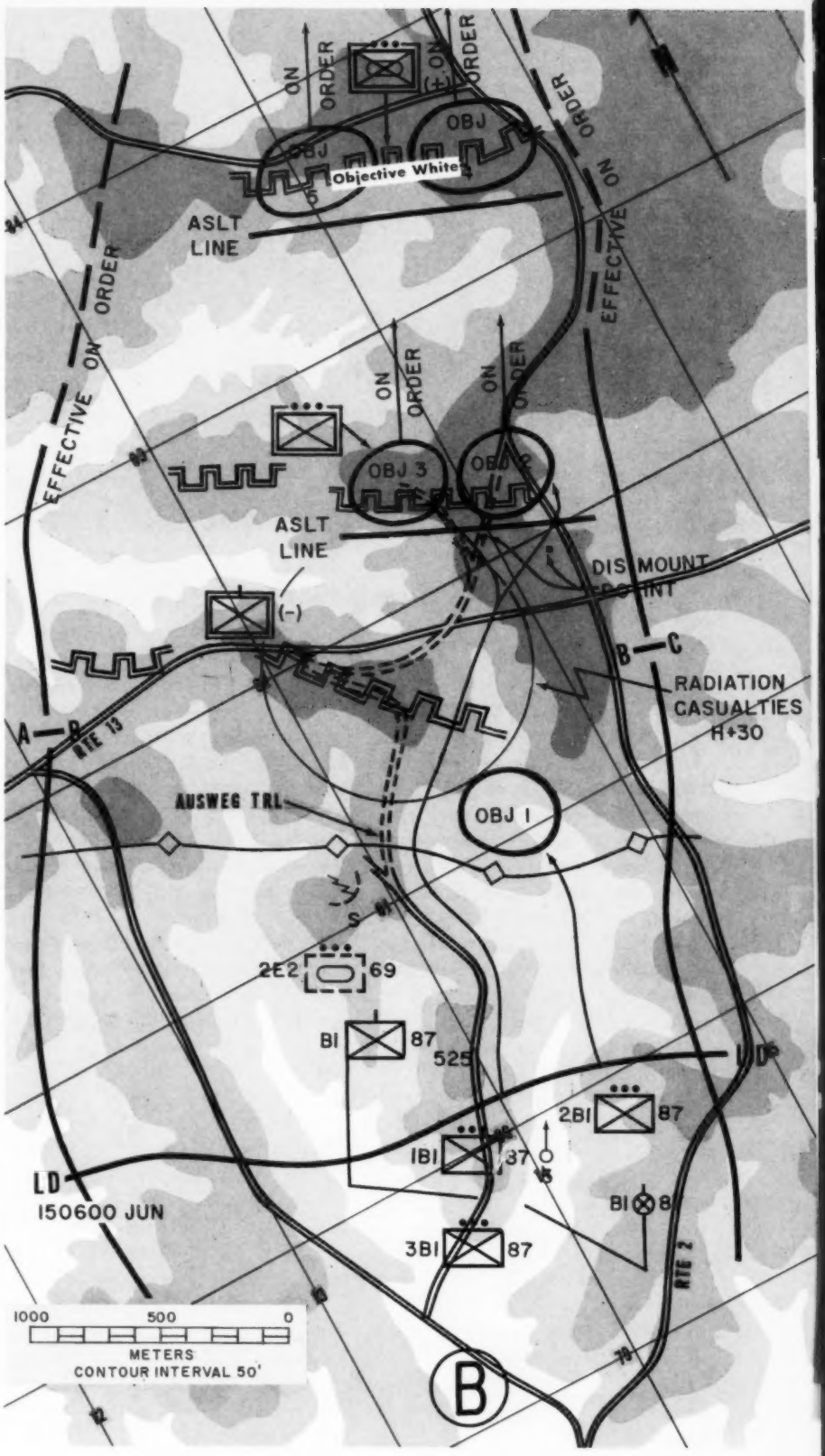
During the initial stages of the attack, the short-range radar team will be employed in a general support role from a position south of the antitank obstacle. The radar team leader will take advantage of the dominating terrain west of Ausweg Trail to provide Captain Bravo with information of enemy movement (through the smoke) in the left portion of Company B's zone. The nature of the terrain precludes complete observation or surveillance, but radar will provide some protection on the exposed flank in addition to the early detection of enemy movement in or near the circle of effects of the nuclear weapon. Upon seizure of Objectives 2 and 3, the short-range radar team will displace to a position near Objective 2 where it can maintain surveillance of the right flank with priority to the avenue of approach leading to the company objective and the objective itself.

Captain Bravo leaves the selection of the CP and CDP to his XO, Lt Thomas, who will position them in an area that affords concealment from enemy observation and cover from direct fire. In addition, the area selected is adjacent to a good route forward, Ausweg Trail. This route will be used when the CP displaces forward. The CDP was located in the vicinity of the Company CP for security and control.

This was the picture, then, when Bravo Company settled down for the night. All of the pieces to the attack puzzle had fallen into place—all of the estimates and recommendations had been translated into a plan, and the plan had been translated into an order passed to every man in the company.

Thus, when Captain Bravo walked through the quiet of his company area that night, he sensed a calm air—one of confident professionals who knew that they could (and would) do their job the next morning.

Captain Bravo had planned his work—soon the time would come to work the plan.



IS THIS ENOUGH?

Have we provided the individual protection needed for battlefield survival?

by COL HENRY E. KELLY

TODAY we provide our soldiers with a vast array of protective devices to nullify the effects of weapons that may be used against them. Tumbling out of our logistical horn of plenty are such items as the protective mask, body armor, protective clothing and decontaminants. These are just a few of the items, and they are admittedly a big help to the doughboy . . . but is this enough for survival on the battlefield?

If an aggressor were to use chemical or biological agents to any great extent, we would find a large chink in our protective armor. Supposing, for example, that you were in command of a unit whose area suddenly became contaminated. You might determine that there are at least three courses of action:

(1) You could move the unit to another area.

(2) You could have the troops put on protective masks.

(3) You could also have the troops move into prepared shelters (if provided).

The first course of action, we'll assume, goes out the window because your commander has ordered you to hold this critical piece of ground. If you were to pull out, it might provide the enemy with an avenue of approach into the battle group's flank or rear.

So we'll say that you have to stay, perhaps for several days. You then logically look to the next course of action, and the field manual provides an answer for you on this score. FM 21-40, *Small Unit Procedures in Atomic, Biological and Chemical Warfare,* tells us that the protective mask, properly fitted and worn, gives protection against inhalation of all known war gases as well as biological agents and radioactive material.

This is excellent; however, what happens when the individual must remove his mask to drink and eat? Obviously, he risks becoming a casualty. We know in this situation that the unit will be here for several days, and so the mask doesn't provide a fully satisfactory answer.

So let's go to course of action number 3—use of protective shelters. FM 21-40 provides an answer on this, too. It includes a chapter on CBR protective shelters which may be used in the event troops are exposed for "periods up to several days." The shelters described are of the dugout type used during World War I, and they are either of an improvised nature for temporary use or of permanent construction, including a ventilating device. However, this won't help you much, either.

Unfortunately, shelters of this type require considerable labor and materials, both of which are rare commodities on the battlefield. And since we have progressed somewhat from the static nature of trench warfare, construction of this type shelter would be both economically and tactically foolhardy. Nevertheless, the equivalent of such shelters is absolutely essential to our troops—in this situation, and in many others. Obviously, our men must be provided with periods of relief from continuous

wearing of protective masks and clothing in order to eat, drink and perform the necessary bodily functions.

Of course, this problem could be solved by expenditure of great sums of money for research and development in order to devise another addition to our already elaborate TOE. However, in view of the emphasis on economy and since this is the era of the austere budget, such a solution would probably create more problems than it would solve.

What we need, therefore, is a simple, inexpensive protective shelter which can be acquired in a relatively short time and with minimum expenditure. And, fortunately, we have such an "animal."

Our vehicles (present and future) can readily become mobile, protective shelters against chemical and biological contamination. Certainly they are the best available substitute for the World War I dugout. Moreover, the degree of our motorization and mechanization is constantly increasing and a unit's vehicles are nearly always in the immediate vicinity. Thus, it should be a relatively simple task to gasproof the majority of these vehicles to include an inner curtain which, when dropped, would provide an entrance vestibule which would allow entrance and exit with minimum loss of protection.

From this, it is apparent that we have the ability and the means to plug the chink in our protective armor. And, surprisingly, it involves a step which can be taken quite easily.

What we must do now is take the bold step to ensure survival on the contaminated battlefield. Only then can we give an affirmative answer to the perplexing question, "Is this enough?"

COL HENRY E. KELLY (USA Retired), a frequent contributor to *Infantry*, is presently a military advisor to the Infantry Human Research Unit at Fort Benning.

The opinions expressed in this article are those of the author and do not necessarily reflect thinking of the United States Army Infantry School.

SMALL-ARMS SIMULATOR

DEVELOPMENT of a Small-Arms Simulator, resembling a small caliber machinegun but functioning on the oxygen-acetylene welding torch principle, has recently been completed by the U. S. Naval Training Device Center. Initial distribution is currently being made to Army installations throughout the United States.

This training device uses a mixture of oxygen and acetylene gas ignited by a spark to produce a noise and flash which simulate rifle or automatic weapons fire. A small amount of kerosene is metered into the gun barrel to produce smoke, permitting easier detection of the device during daylight operation.

The Simulator operates on a 12-Volt DC battery or 110 Volts AC. The firing is controlled by means of a remote control switch which can be operated from the firing line while the device itself, along with its tanks and other equipment, is emplaced in a protective pit in the target area. To fire the device as a rifle simulator, the operator presses the remote control button and releases it immediately. To simulate an automatic weapon, the remote control button is held in the depressed position.

The flash-noise simulator lends itself to many training situations, such as a "cue" to indicate aggressor activity. It can be employed in night maneuvers for noise and flash recognition and in daylight tactics in combination with target devices. Emplaced in an impact area, the device may be used with panels or "killable" target devices to simulate enemy fire and to aid in teaching target detection. In night training the unit may be used to teach range estimation through the flash and sound technique.

The device is economical to operate since it will simulate firing of approximately 20,000 rounds of ammunition at a cost of about $5.00. The cost of firing the same amount of blank ammunition for caliber .30 weapons would be approximately $900.00.

Although cumbersome, the Simulator and control equipment can be readily man-transported into position.

THIS SHOW IS NOT RIGGED

by Lt Col A. E. Seifert

Tactical advantage will not wait for clumsy organization . . . and there is no consolation prize on the battlefield.

Recently, many of our citizens became incensed at the disclosure that some quiz-show contestants were given the answers to questions before air-time. Of course, this allowed the contestants to prepare in advance for the show. Yet, it was contended by some that this advance information was necessary in order to produce the best effects. Maybe so.

It is admitted that in any situation people react best when they know what is expected of them. And this is especially true in a combat situation. Certainly the Infantry rifle company commander trains his men for the one "really big show," and he also makes sure that his men know exactly what will be asked of them. He, too, plans to produce the "best effects," but with deadly serious consequences. He knows his men, and how they will react.

This is true until the company is mechanized. Then the show becomes "unrigged." At the very time when the company commander wants to exploit certain tactical advantages, he must load his men in unfamiliar vehicles driven by men he does not know, but on whom he must depend if the ultimate victory is to be won. Unfortunately, it is this unfamiliarity which poses his greatest problem.

To illustrate this point, let us consider a hypothetical situation in which a rifle company is mechanized to participate in the main attack. *You* are the company commander and are scheduled to receive 17 armored personnel carriers. Somewhere between the division trains and your assembly area, two carriers break down and you receive only 15. You then change your loading plan and the attack proceeds. En route to the first objective, a carrier loaded with the weapons squad of your first platoon gets stuck in a mud hole. Further on, the company dismounts to fight on foot, leaving the carriers to follow by bounds. When it is time to remount in order to continue toward the next objective, it is discovered that one carrier is apparently lost. This causes another change of loading plans. Finally, the objective is seized. The platoon leader of the third platoon then places his carriers on the reverse slope to protect the right rear of the company position. Suddenly, he discovers that one carrier driver has gone back to the trains area to "get a mechanic to fix his vehicle."

Before castigating the personnel of the division Transportation battalion, suppose we consider the following questions: Why did the two carriers break down before they arrived at the assembly area? Was it faulty equipment, faulty maintenance or inability to find the unit? Why did one carrier get bogged down in a mud hole? Was it intentional on the driver's part or did the vehicle commander (the Infantry squad leader) unwittingly direct the driver into the mire? How did one driver get lost? Again, was it intentional, or was the driver unfamiliar with his duties? And finally, why did one driver leave his vehicle to get a mechanic? Could it be that he wanted to get out of the fight or was it that he was conscientious and earnestly desired to ensure dependable operation of his vehicle? These are all "64-dollar" questions—but what of the answers? Could they all be traced to this same "unfamiliarity" and the fact that the mechanized and Infantry elements were not a single cohesive entity?

These situations posed above are not at all inconceivable under the current system of pooling carriers at division level. What, then, can be done to alleviate this condition? After a rather detailed study of current authorizations, and in consideration of the present limitation of funds and personnel spaces, one possible solu-

tion suggests itself: the complete mechanization of one battle group of the Infantry division.

There may be disadvantages in this type of organization, to be sure. The most outstanding is that instead of being able to mechanize *any* battle group, the division commander must rely on the single battle group so organized. This disadvantage is more apparent than real, however. In the first place, situations seldom develop instantaneously in which a mechanized attack is necessary. Commanders will normally have ample time for planning as the logical sequence of actions dictates. Therefore, the committing of the organic mechanized battle group can be planned, and with more facility than with utilization of the carrier companies.

Another point of argument may derive from the fact that the readily available rifle strength of the division would be reduced by one battle group. This is not true. The mechanized battle group *can* and *must* be prepared to fight dismounted at any time. There may well be occasions when it is desirable to employ only one or two mechanized companies in a battle group sector. This can be accomplished by attaching the necessary mechanized rifle companies to the battle group just as the tank companies are now attached.

There are many other combinations and permutations possible when considering attachments, but further discussion of them would avail us little. There is one obvious combination that will inevitably result: cross-attachment of tanks and mechanized Infantry.

Consider the advantages of such an organic mechanized battle group in the Infantry division. Here is a unit that would be organized and habitually trained to fight as mechanized troops, mounted or dismounted. Drivers *belong* to the squads, and the squad leaders, in turn, are responsible for the maintenance and operation of their vehicles. Employment of the carriers involves no complicated loading plans. No decision is necessary as to who will be left on foot. Logistic support of the mechanized element would pose no great problems since the battle group would be doing this on a daily basis. (This is not true when mechanized elements are attached to a standard Infantry battle group.) Lastly, cohesiveness exists throughout the organization.

As for the division commander, look at the potent force he could organize for an exploitation—five armored rifle companies and five tank companies, with appropriate cross-attachments—the fighting equivalent of an Armored division combat command!

All of these advantages—to the battle group and the division—are becoming more apparent as time goes on. An Infantry officer of considerable combat and training experience recently told me that if war should start tomorrow, he would strongly advocate earmarking one battle group of each division for intensive training in mechanized operations. This battle group would have carriers permanently attached from the Transportation battalion in order to achieve the close coordination and cooperation required in mechanized combat. In this manner, training could be simplified and made more efficient since it would not be necessary to train all five battle groups in mechanized operations. By the same token, the armored personnel carrier drivers would become familiar with standing operating procedures of the single unit with which they would habitually operate.

The organization of a TOE mechanized battle group accomplishes all this and more. In addition to establishing a unit with organic carriers, it provides for most of its own logistical support and effects savings in personnel spaces as well. One workable solution is shown in Figure 1.

With reference to this organization, it should be noted that: (1) each rifle company is organized and equipped the same as the Armored rifle company, Armored division; (2) the heavy mortar platoon is the same as in headquarters company, Armored Infantry battalion, except that two mortars have been added for a total of six; (3) the Infantry battle group headquarters company is changed primarily by augmenting the logistical capability, assigning one Armored Engineer platoon, and assigning only the AN/TPS-21 radar section (the AN/PPS-4 is organic to the rifle company).

With the organization described above, it is interesting to compare the resulting strength and equipment figures with those of the currently authorized Infantry division battle group. Although the mechanized battle group contains an additional warrant officer and 12 more enlisted men, the officer strength is reduced from 67 to 59 (an increase in aggregate strength of only five spaces). On the

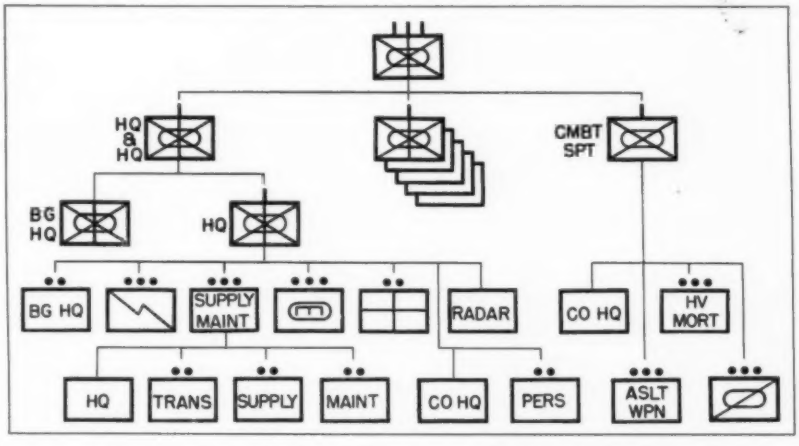


Figure 1. A workable solution for a mechanized battle group.

other hand, consider the savings accomplished in the Transportation battalion. The two carrier companies are eliminated, providing a decrease of eight officers and 176 enlisted men. Furthermore, this obviates the need for a Transportation battalion organization, as the only remaining elements are the truck transport company and a small aircraft maintenance detachment. Thus, the battalion is reduced by approximately 19 officers, four warrant officers and 283 enlisted men.

Exact comparison of major items of equipment is more difficult because of the interrelation of organizational structure. It will be noted, however, that the total number of armored personnel carriers in the division is reduced from 180 to 105 with a substantial reduction in the number of ¼-ton and ¾-ton trucks currently authorized. This reduction is accompanied by a modest increase in 5-ton vehicles and tank recovery vehicles. A general comparison of vehicular requirements of this particular mechanized battle group with those of the Transportation battalion and the Infantry division battle group is shown in Figure 2.

Vehicles	Mechanized BG	Infantry BG	Trans Bn (–)
APC	107	2	115
Tk Recovery Veh	7		2
5-ton Wrecker	3		1
5-ton Truck	15	7	
2½-ton Wrecker		2	
2½-ton Truck	27 (2 dump)	18 (3 dump)	7*
1200-gal Tanker	5		
¾-ton Truck	17 (6 amb)	50	3*
¼-ton Truck	57	**78 (14 amb)	18*

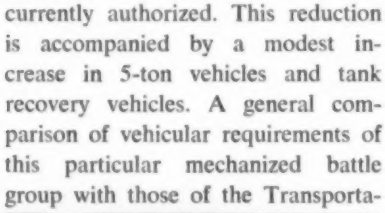
* Truck Co & Aircraft Maint Det not included
** 106mm recoilless rifle vehicles not included

Figure 2. A comparison of vehicular requirements.

In addition to the obvious savings in personnel and equipment, greater simplification of training can be realized by organization of mechanized battle groups. Additionally, a better end-product should result. Flexibility afforded the division commander will not be impaired. On the contrary, a well-trained unit could enhance this flexibility. Finally, the proposed mechanized battle group epitomizes unit integrity. It is not a makeshift organization and its effectiveness on the battlefield would provide a marked improvement over what we now have.

Certainly planning must not wait for a war to start—we must plan and train *now* for combat if we are to be truly prepared. Let's rig the show! Give everyone the answers. No one must be in doubt as to his job and his part in the act. Then, for the production number, our directors (commanders) will know in advance just how the participants will respond—and the payoff will be far greater than any cash prize!

The opinions expressed in this article are those of the author and do not necessarily reflect thinking of the United States Army Infantry School.



LT COL ALBERT E. SEIFERT, Armor, is a 1942 graduate of the United States Military Academy. He served as an Infantry platoon leader and company commander with the 355th Infantry Regiment from 1942 through 1943. He later became a company commander and staff officer in Europe with the 14th Armored Division. After attending the Command and General Staff College in 1946, he became Assistant G3 and later, Executive Officer of Combat Command A, 2d Armored Division. Colonel Seifert has also served as Assistant G3 in USAREUR Headquarters and as an advisor to the Japanese Self Defense Forces. He is a former instructor in tactics at the Armor School and is presently Chairman of the Armor Committee of the Command and Staff Department at the Infantry School.

LETTERS (Continued from page 55)

critical, free-wheeling articles. . . .

Col James L. Osgard
2d Battle Group, 9th Infantry
Fort Benning, Ga.

We agree. See "Sharpen the Sword" in this issue. Ed.

● . . . [*Infantry*] should be directed at the senior people who have become rusty on their Benning courses and are trying to keep abreast of changes in the Infantry. . . . Articles on Infantry organization, tactics, techniques, and equipment are the "bread and butter" of the magazine. This gives the reader what he needs, since the magazine is a year or more ahead of the published DA manuals . . . Articles on strategy or national military problems should be left to *Army* magazine. . . .

. . . Regarding contributors, I must say frankly it is difficult for anyone on troop duty over here to prepare an article. It would be helpful if you would put out some general information on how to obtain clearance [of articles for publication]. Preferably, you should handle it for the author, since most officers over here shy away from such red tape. . . .

Col Elmer Schmierer
1st Battle Group, 19th Infantry
APO 112, New York, N. Y.

It has always been Infantry's *policy to obtain clearance of articles for its authors when needed. We are happy to do this and ask that articles be typewritten, double-spaced and sent to: The Editor,* Infantry *Magazine, Doctrine Publications Office, Fort Benning, Ga.* Ed.

POST SCRIPT

Nobody asked us, but we thought it worth mentioning that the last two issues of Infantry *have brought forth more reader response than we have ever experienced previously. We appreciate the many comments made about* Infantry, *and particularly those which suggest means of improvement. As long as you let us know what you want, we'll attempt to give it to you . . . or, as one office wag put it, "We aim to please—all we need is a target."* Ed.

TRICKS OF THE TRADE

by Lt Dudley L. Fry Jr.

Direction Finders

Every soldier must presume that there will be occasions when he will be without the use of his compass due to loss, damage or malfunction. Of course, when this occurs, other methods must be used to find direction. One of the best direction-finding expedients (and one which every Infantryman should master) involves the use of clear skies and a wrist watch.

At night, in the Northern Hemisphere, the North Star (Polaris) is the best means of determining direction. It can be easily located by first locating either the Big Dipper or the Big "W" (Figure 1). Note the characteristic alignment of the seven stars in the Big Dipper and the five stars in the Big "W", and their relation by position to that of the North Star. Note also that the two "pointers" of the Dipper invariably aim at the North Star.

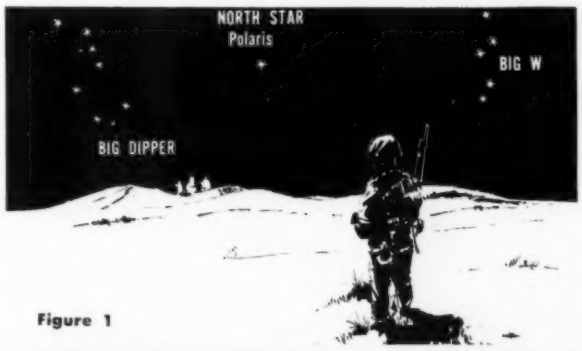


Figure 1

Another technique for determining direction can be applied by sighting on a star (Figure 2). Secure two sticks, one long and one short. Place both sticks in the ground, the short stick closest to your eye and two to three feet from the long stick. Sight across the top of the two sticks at any star. Continue sighting at the star and in a few minutes the star will seem to move. If it appears to move down, you are looking generally west. If it appears to be moving up, you are looking generally east. When it appears to be moving in an arc to your right, you are looking generally south, and in an arc to your left, you are looking generally north.

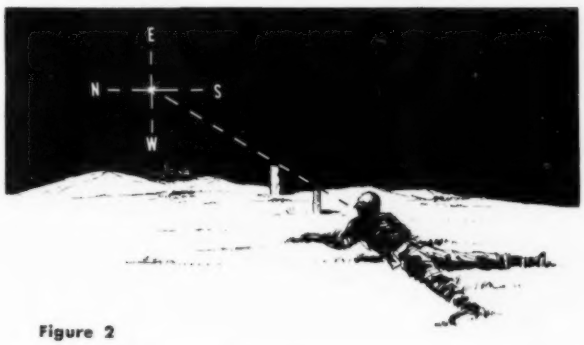


Figure 2

During daylight, direction can be determined by using a watch (Figure 3). Point the hour hand at the sun, bisect the angle formed by the hour hand and twelve noon and that will be south in the North Temperate Zone (or north in the South Temperate Zone). A more accurate technique is to place the watch on the ground, then rotate it until a stick placed against the edge of the watch throws a shadow along the hour hand. The following interpretations can be made:

AM—South is halfway between the hour hand and noon (clockwise from the hour hand).

Noon—South is along the shadow and hour hand.

PM—South is halfway between the hour hand and noon (counterclockwise from the hour hand).

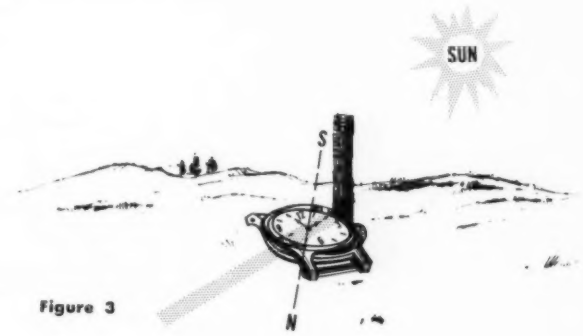


Figure 3

WHAT'S NEW FOR INFANTRYMEN

Changes • New Developments • Items of Specific or General Interest to Infantrymen

DAVY CROCKETT

The Davy Crockett, designed to give Infantry units a low yield nuclear punch at close ranges, is shown above. Programmed in two models, the weapons system may be mounted on a jeep, mechanical mule or armored personnel carrier. The lighter model can be hand carried and is fired from its tripod mount. Although warhead size and weight and specific effects remain classified, the radius of damage is such that the troops using it, and nearby friendly forces, would not be endangered.

Full production of the Davy Crockett will begin in Fiscal Year 1961, and with its introduction to the weapons system the fire power of U. S. ground forces will be significantly enhanced.

VEHICLE NAVIGATION SYSTEM

Army Engineers have developed a Land Navigation System that will keep vehicles on course when traveling over poorly defined or unmapped areas such as the arctic, desert or jungle.

The system, which includes a gyro-compass, an analog computer, a distance transmitter and a power supply, will inform a driver of the direction to home base as well as the distance and direction to his destination.

Packed in four units and weighing a total of 85 pounds, the new system is expected to be available for troop use in 1961.

WIND MEASURING SET

A standard Navy item for measuring wind speeds has been recently approved for Army use. The Wind Measuring Set AN/PMQ-3C will be used by Army personnel involved in airborne operations to measure wind velocities on drop zones. The new device is capable of measuring winds from 0 to 60 knots and is portable, weighing just 18½ pounds.

PERSHING MISSILE

The Army recently fired its newest and longest range surface-to-surface missile, the Pershing. The missile is of the two-stage, solid propellant type and retains the mobility, field worthiness and accuracy of the Army's Redstone missile. Because it is smaller and lighter, it also has greater mobility.

Pictured here with its transporter-erector-launcher, the Pershing can be transported to an unprepared site, erected and fired in a matter of minutes. The Pershing is also designed to be air transportable.

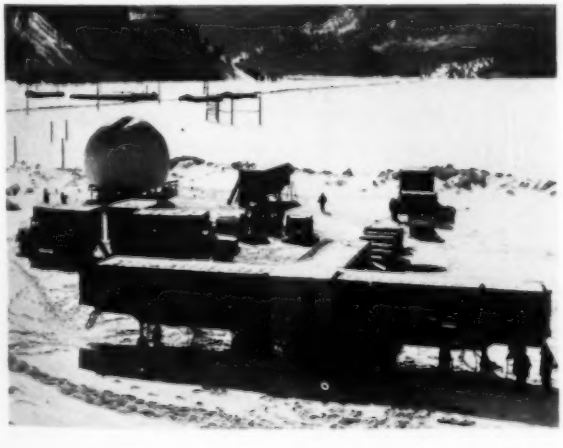
NEW HOWITZER

An Italian-developed 105mm pack howitzer is now being evaluated by the Marine Corps for possible use as a close support artillery weapon. The howitzer is both mobile and versatile. It weighs only 2860 pounds, fires the standard U.S. 105mm shell, is helicopter transportable and breaks down into 16 component parts which can be man-carried. Shown here with its barrel elevated for firing a normal artillery mission, the howitzer's muzzle can also be depressed and the carriage lowered to permit delivery of direct, flat-trajectory antitank fire.

MISSILE MONITOR

Pictured below is a mobile, corps-level air-defense command post unit which is in the missile monitor fire direction system now being deployed to operational sites with the U. S. Army in Europe.

The missile monitor can detect, track and store information on large numbers of airborne targets and information on the readiness and actions of each air-defense missile battery. Targets are tracked automatically by an electronic computer while weapon assignment information is flashed through the network to missile batteries. Hawk or Nike missiles may then be employed to destroy the attacking aircraft.



HU1 IROQUOIS HELICOPTER

The Iroquois (pictured above) is the Army's first turbine-powered rotary-wing aircraft. It represents a vast improvement over the H19 Chickasaw which it replaces. It is smaller, easier to maintain, far more versatile and has an increased payload capacity. The new aircraft was "battle tested" for the first time during the recently completed Exercise Banyan Tree II in the Panama Canal Zone. The Iroquois provided tactical support to the maneuver and served as a mobile command post for staff and troop commanders.

In addition to fulfilling an urgent requirement for a general purpose utility vehicle, the helicopter is able to function as a mobile launching platform for SS11 guided missiles.

AN/APQ-55 RADAR

A new radar that will produce aerial maps of thousands of square miles of terrain per hour, night or day, in any weather in which aircraft will fly, has recently been developed. This new device will give field commanders near-photographic, up-to-the-minute information on troop and materiel movements well behind aggressor front lines and will pinpoint targets over wide areas.

The new mapping radar will penetrate camouflage and can "see" through rain and fog. Designed for low-altitude operation—1000 to 5000 feet—its light weight of 350 pounds makes possible its use in small aircraft without the removal of other normally carried equipment.

Field commanders are provided with data within moments after the aircraft makes its pass by means of a microwave data link which transmits directly from the radar receiver back to a film recorder and processor at the command post.

XM 70 ROCKET-BOOSTED ARTILLERY

Now in the advanced research and development stage, the XM 70 (which was developed by the Army for the Marine Corps) is this country's first automatic field artillery weapon. The XM 70 rocket-boosted artillery (115mm) weighs only 3000 pounds, is effective at greater ranges than the 105mm howitzer and is capable of firing direct as well as indirect close support missions. The weapon is easily manhandled and can be towed by a lightweight vehicle such as the "mule." Its rate of fire is 6 rounds every 2½ seconds.

AMPHIBIOUS ¼-TON TRUCK

Army Ordnance is negotiating a contract for the construction of an amphibious ¼-ton truck. The body, wheels, seats and top will be made of plastic. A two-cylinder engine will operate a variable displacement pump, and a hydraulic motor utilizing hydraulic drive will power each wheel.

DAN PATCH

Laying 150 antitank mines in 10 minutes, the experimental Dan Patch Mechanical Mine Layer does a job which once required many hours of back-breaking labor.

ATMOSPHERE PROBER

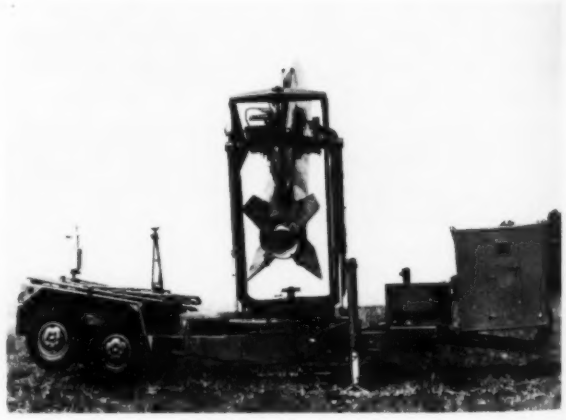
Development of a rocket-borne radiosonde, which electronically probes the atmosphere up to a height of 40 miles for weather data (twice the usual ceiling for weather balloons), has been announced by the Army.

Information gathered by the radiosonde will be of benefit in aircraft and missile design and use, as well as artillery and missile aiming. The six and one-half pound device has a radio transmitter and silver-zinc batteries in an 18-inch fiberglass shell.

PROJECT MAN

The following items were displayed during Project MAN held at Fort Benning on 2 May 1960.

AN/MWQ-8 (XL-2) VT FUZE JAMMER



SERGEANT MISSILE

Shown with its 16,000-pound erector-launcher, the Sergeant promises to be an important member of the Army's missile family.

T118 COMBAT ENGINEER VEHICLE

This dozer-tank may be used for clearing paths for tanks and as a tank retriever.

MINE DETECTOR

This hydraulically controlled mine detector is used for sweeping paths for vehicles through minefields. When the detector finds a mine, it automatically stops the vehicle.

MONTHLY LIST OF INSTRUCTIONAL MATERIAL

The Monthly List, an official publication of the Infantry School, is produced to facilitate the coordination of Infantry doctrine among Army service schools and to offer Infantry School instructional materials to Army agencies which conduct, support or monitor school-type instruction. *The Monthly List* is distributed under the provisions of USCONARC Memorandum Number 48, dated 14 October 1958, and each authorized addressee is furnished one gratuitous copy of any item listed which he specifically requests for official use.

Infantry reproduces items listed in current issues of the *List* as a reader service. Items which are preceded by an asterisk may be purchased from the Book Department, USAIS, Fort Benning, Ga., at the prices indicated, by anyone who is a member of the United States Armed Forces and who so states when ordering. The official military unit or agency address should be included with all such orders since such mail cannot be sent to a private residence. If a personal address is given, the cost of postage must be enclosed with the order.

Items not marked with an asterisk are produced in limited quantities for resident instruction at the Infantry School and are not available for purchase. However, a unit or agency having a strong official need for any of these items may request a gratuitous copy from the Doctrine Publications Office, USAIS, Fort Benning, Ga. Such requests must state the purpose for which the material is needed and must include the official title and unit or agency address of the requester. Properly justified requests will be filled so long as the supply lasts.

***Familiarization with Army Aircraft,** 5321-USAR (ADT). Integrated conference and demonstration on Army aircraft by type; limitations and capabilities. $.15

***Role of the Infantry,** 6005-I1 USAR (ADT). Lecture covering the importance of ground forces, the character of future warfare and the status of the Infantry now and in the future. $.10

***Organization and Equipment of the Infantry Division,** 6050-I1 USAR (ADT). Conference on the organization and equipment of the Infantry division. $.15

***Enemy Indications and Capabilities,** 6215-A3. Integrated conference and practical exercise covering the organization and tactical doctrine of the aggressor rifle division. $.50

***Counterintelligence,** 6235-A1 USAR (ADT). Integrated conference and practical exercise covering counterintelligence. $.60

***Battle Group in Attack, Foot Mobility,** 6260-A18. Illustrates the basic fundamentals applicable to a battle group in a dismounted attack under nonactive and active nuclear warfare. $2.25

Battle Group in Attack, Carrier Mobility, 6464-A18. Map exercise covering mechanized battle group in the attack under nonactive and active nuclear conditions.

***Tactical Air Operations with Ground Forces,** 7015-USAR (ADT). Integrated conference, utilizing Air Force training film, covering the aircraft and ordnance used in close support of ground forces. $.10

***Communication Systems of the Infantry and Airborne Rifle Companies,** 3631-USAR (ADT). A conference and practical exercise covering the communication systems of the Infantry and airborne rifle companies, with emphasis on radio nets. $.20

***Communication Systems of the Combat Support Company and Infantry and Airborne BGs,** 3635-USAR (ADT). Conference and practical exercise covering the communication systems of the Infantry and airborne battle group to include the combat support company. This material is applicable to nuclear and nonnuclear warfare. $.15

*__Aerial Delivery,__ 5678-USAR (ADT). Familiarization with the methods of supply by air and parachute and responsibilities of the requesting ground commander. $.30

*__Tactical Study of Weather and Terrain,__ 6210-A3. Teaches Advanced Course Infantry officers the analytical considerations of weather and terrain and their influence on military operations. $.50

*__Tactical Study of Weather and Terrain,__ 6210-A3-USAR (RDT). Practical exercise covering the following: form and content of the tactical study of weather and terrain and techniques used in its completion; analytical considerations of weather and terrain and their influence on operations. $.60

*__Enemy Indications and Capabilities,__ 6215-A2-USAR (RDT). Teaches Advanced Course students the organization of the aggressor rifle division and the tactical concepts of its employment. $.50

*__Direction of the Collection Effort,__ 6220-A4-USAR (RDT). Practical exercise on the purpose and content of the collection plan; determination of enemy indications; selection of collection agencies; selection of data; and source of information. $.50

*__Logistical Organization, Operations and Systems I,__ 6513-14-USAR (ADT). Integrated conference and practical exercise covering logistics within the Infantry division battle group. $.90

*__Logistical Organization, Operations and Systems II,__ 6514-14-USAR (ADT). Integrated conference and map exercise on duties of the battle group S4, supply and maintenance platoon personnel, unit commanders and platoon leaders; functions of the supply and maintenance platoon. $1.20

*__Infantry-Tank Team in Attack,__ 6864-I1-USAR (ADT). Demonstration covering the role of the Infantry-tank team in attack. Problem encompasses the following: composition of typical teams; methods of employment; communication and target designation. $.30

__Rifle Company in Retrograde Movement,__ 6972-B6. Terrain exercise to teach the principles, general considerations and techniques involving a rifle company in retrograde movements.

*__Pamphlet, Anti-Tank Guided Missiles SS-10, SS-11.__ History, capabilities, characteristics, organization and equipment, and methods of launch. $.10

*__Handbook, Communication Data, Infantry and Airborne BG.__ Type communication in the airborne and Infantry battle groups. $1.10

TRAINING FILMS

The following training films have been approved for release to requesting units:

__AIF 12,__ The Army—Deterrent to Aggression, 27 minutes.

__AIF 5,__ Code of Conduct—Article I—Our Heritage, 8 minutes.

__SFS 38-43,__ Packaging and Packing—Palletization, 10 minutes.

__SFS 38-56,__ Packaging and Packing—Specifications, 16 minutes.

__SFS 38-58,__ Packaging and Packing—Cushioning, Blocking and Bracing—Part II, 15 minutes.

__MF 15-9100,__ The Most Rewarding Law, color, 30 minutes.

__MF 20-9106,__ Look Toward Tomorrow, 29 minutes.

__TF 6-2850,__ Artillery Orientation by Sun and Star—Part I—The Altitude Method, 15 minutes.

__TF 7-2796,__ Trainfire I, 25 minutes.

__TF 7-2889,__ Foot Marches, 23 minutes.

__TF 8-2762,__ Heat Disorders—General Effects of Heat on Man, 22 minutes.

__TF 11-2820,__ Installation and Operation of the TT-4A/TG and the AN/TCC-14, 29 minutes.

__TF 11-2827,__ Climbing and Working on Poles, 25 minutes.

__TF 16-2795,__ Esprit, 6 minutes.

__TF 16-2882,__ Right, 8 minutes.

__TF 16-2883,__ Marriage, 8 minutes.

__TF 17-2830,__ Water Operations of the M59 Armored Personnel Carrier, 23 minutes.

__TF 17-2837,__ The Tank Company Team in Offense—Coordinated Attack, 28 minutes.

__TF 19-2749,__ Geneva Conventions—Rights and Obligations of Prisoners of War, 28 minutes.

TRAINING LITERATURE

The following manuals and other training literature have recently been printed by Department of the Army and are available to instructors through normal publications channels:

__FM 7-19,__ Combat Support Company, Infantry Division Battle Group (new).

__FM 7-21,__ Headquarters and Headquarters Company, Infantry Division Battle Group (revision).

__Changes No. 1 to TM 57-220,__ Technical Training of Parachutists (material on new canopy release assemblies).

__ATP 7-32,__ Headquarters and Headquarters Company, Airborne Division Battle Group.

__ASubjScd 7-1,__ Organization, Mission and Employment of the Infantry and Airborne Division Battle Groups.

__ASubjScd 7-29,__ 90-MM Full-Tracked, Self-Propelled Gun, M56.

__ASubjScd 7-31,__ Assault Gun Platoon Tactical Exercises.

__ASubjScd 21-5,__ Guard Duty.

(6) Weapons and Vehicles

(a) Weapons:

Basic Artillery Weapon . . . . .

NOTE: When it is desired to show the direction of fire of an artillery weapon, a line is drawn across the base of the symbol.

EXAMPLE: Base Fixed Line of Fire

High Trajectory (placed on base of weapon symbol). .

Antiaircraft (surrounding weapon symbol). . . . .

Self-propelled (surrounding weapon symbol) (tracked and halftracked vehicles only) . . . . .

Rocket Projector (placed on apex of weapon symbol)

Arc of Fire of any weapon . . . . .

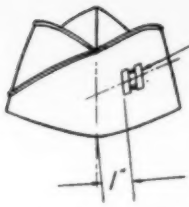
Arc of Fire of light machinegun (Appropriate weapon symbol may be used. The base of the shaft of the symbol indicates the position of the weapon.) . . . .

Fixed Line of Fire . . . . .

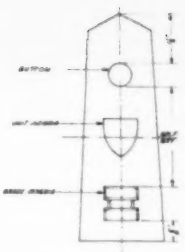
Fixed Line of Fire of a light antitank gun (Appropriate weapon symbol must be used to avoid confusion with movement symbol.) . . . . .

Arc of Fire and Fixed Line of Fire of a heavy machinegun. (The two symbols may be used together, providing a weapon symbol is used.) . . . . .

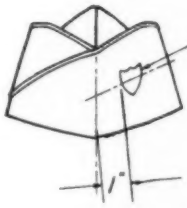
17



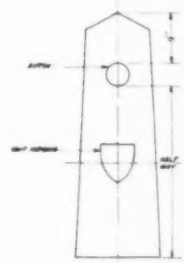
Insignia of grade, officers and warrant officers.



Officers and warrant officers



Unit insignia, enlisted men.



Enlisted personnel

"Airborne" insignia may be worn when prescribed by commanders, as follows:

(1) *Officers:* On the garrison cap, right curtain, 1 inch from the front.

(2) *Enlisted personnel:* On the garrison cap, left curtain, 1 inch from the front, in lieu of unit insignia.

Combat Leader's identification is a green cloth loop 1⅝" wide, worn in the middle of both shoulder loops of the service coat, jacket, overcoat, or shirt when worn as an outer garment.

30

Dummy (placed on top of symbol) . . . . .

Guided Missile . . . . .

Guided Missile Launching Site:

Surface-to-Surface Missile. . . . .

Surface-to-Air Missile . . . . .

Desired Ground Zero of nuclear weapon. (Dot indicates DGZ; 120m is height of burst; AE001 identifies the target, BRAVO is the type weapon; and A/2/9 is the unit assigned the mission of delivering the weapon.)

WEAPON	CALIBER		
	Light (and basic)	Medium	Heavy
Machinegun			
Mortar	81mm or smaller	Greater than 81mm but less than 200mm	200mm and larger
Air defense machinegun			
Infantry antitank weapon, rocket launcher or recoilless rifle			
Gun or gun howitzer	115mm or smaller	Greater than 115mm but less than 155mm	155mm and larger Also super heavy

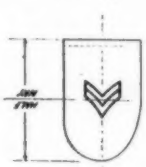
16

Insignia with Army Green background is worn with the Army Green, Army Tan, Khaki and work uniforms. Insignia with blue or white background is worn with the Army Blue or Army White uniform respectively.

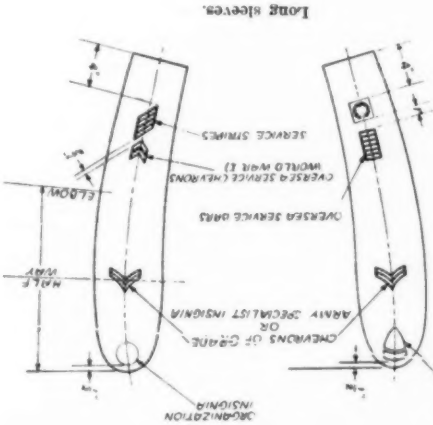
The RANGER tab is worn ¼ inch above appropriate organizational shoulder sleeve insignia on the left shoulder.

29

Short sleeves.



Long sleeves.



Howitzer, high trajectory artillery weapon

115mm or smaller | Greater than 115mm to include 155mm | Larger than 155mm

Gun in antitank role

115mm or smaller | Greater than 115mm but less than 155mm | 155mm and larger

Rocket Projector (artillery)

115mm or smaller | Greater than 115mm but less than 160mm | Larger than 160mm

Gun in air defense role

Less than 80mm | 80mm or greater, weight less than 20 tons | Weight 20 tons or more

Flamethrower

Manpack | Mounted on vehicle

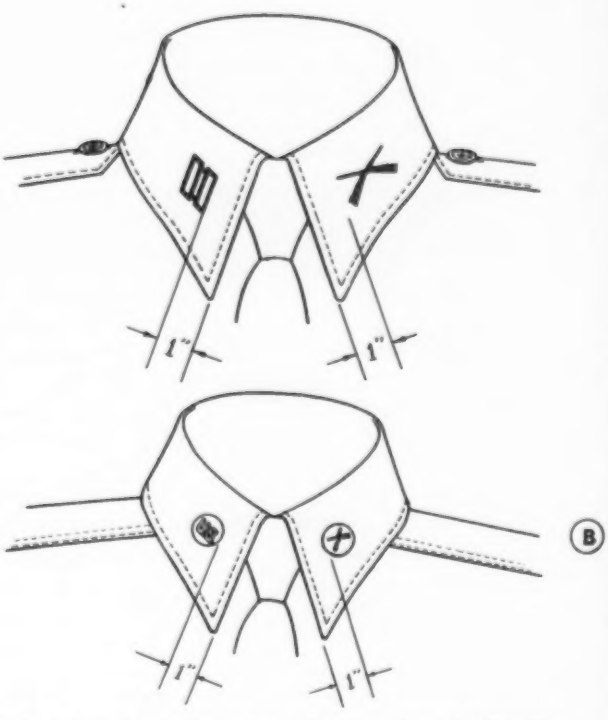
(b) Vehicles:

(B) Tank, Light . . . . . .

Tank, Medium . . . . . .

Tank, Heavy . . . . . .

Emplaced or Dug In . . . . . .



Insignia is centered between top and bottom edges of collar. The vertical bisecting line of each insignia lies parallel to the inner edge of the collar.

(NOTE: End of staff in above examples indicates the exact location of the installation.)

Water Point Number 2, 10th Inf Division . . . . . 2 W 10

Field Trains, 1st BG, 87th Inf . . . . . FTd 1 87

Combat Trains, 1st BG, 87th Inf . . . . . CT 1 87

Co A (Trk), 30th Trans Bn . . . . . A 30

Aid Station, 1st BG, 87th Inf 87

Straggler Collecting Point, 1st BG, 87th Inf . . . . . S 87

Collecting Point, Prisoners of War, 1st BG, 87th Inf . . . . . Coll 1 PW 87

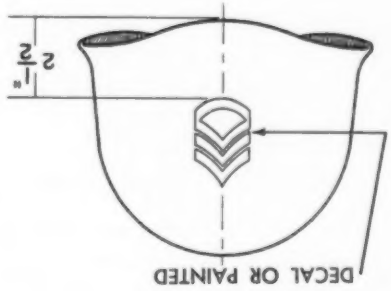
Collecting Point, Recovery and Disposition, 1st BG, 87th Inf . . . . . Coll 1 GR 87

Collecting Point, Civilian Refugees and Evacuees, 1st BG, 87th Inf. . . . . Coll 1 Civ 87

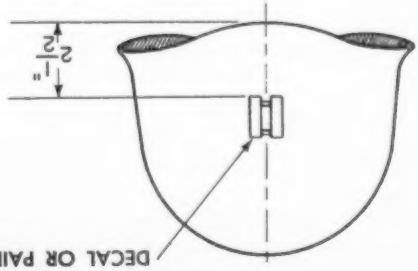
Supply and Administration Symbols

Company Distributing Point (CDP), Co A, 1st BG, 87th Inf. . . . . A 87

Staple



CENTERED



STEPS TO OPERATE RADIO AN/VRQ-3

Radio AN/VRQ-3 is composed of two "Sets 1."

Operation of Set 1.

A. Turn the MAIN POWER switch (1) on the mount to the ON position.

B. Turn the OPERATE switch (2) to the TRANS & RECEIVE position.

C. Turn the TRANS POWER switch (3) to the LOW position.

D. Turn the KCS CONTROL (4) and the MCS control (5) until the desired frequency appears in the DIAL window (6).

E. Turn the VOLUME control (7) fully clockwise.

F. Turn the SQUELCH control (8) off.

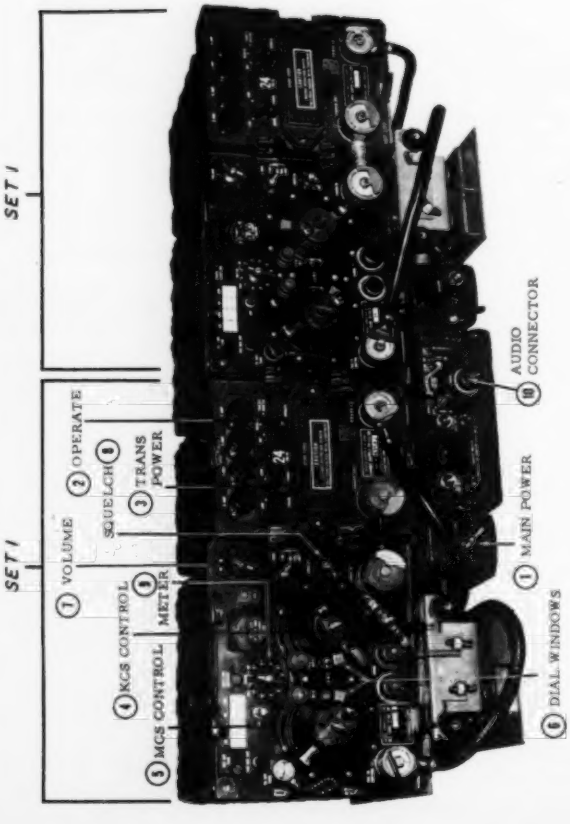
G. Ensure that the METER switch (9) is in the RF position.

H. Connect a handset to either AUDIO CONNECTOR (10).

I. Press the push-to-talk switch on the handset (not shown), pause for a moment, and then attempt to contact the distant station; release the push-to-talk switch to listen.

J. If no contact is established, turn the TRANS POWER switch (3) to the HIGH position and repeat step I above.

K. After contact is made with the desired station(s) adjust the VOLUME control (7) for the desired audio level.



STEPS TO OPERATE THE AN/PRC-6.

A. Remove ANTENNA (1) from around case and screw to WHIP ANTENNA CONNECTOR (2) (top of case).

B. Remove cover.

C. Swing battery cable guard (inside case) out until it disengages battery cable plug.

D. Insert battery into battery compartment.

E. Connect battery cable plug to battery socket using the two widely separated pins as a guide.

F. Swing battery cable guard until it engages battery cable plug.

G. Replace cover.

H. Open AIR VALVE (3) by turning ¼ turn counterclockwise.

I. Operation by means of the built-in earphone and microphone:

(1) Turn POWER switch (4) to INT position.

(2) Hold EARPHONE (5) to ear and listen for rushing noise.

(3) If no rushing noise is heard, turn VOLUME control (6) fully clockwise. (If no rushing noise is heard, open case and check battery connection. If a rushing noise is still not heard, replace battery. If a rushing noise is still not heard, set is inoperative.)

(4) To transmit, press PUSH-TO-TALK switch (7) on side of case, pause for a moment, then speak in a clear, normal voice into MICROPHONE (8). Release PUSH-TO-TALK switch to listen.

J. Operation using handset.

(1) Connect HANDSET (9) to AUDIO Connector (10).

(2) Turn POWER switch (4) to EXT position.

(3) Hold HANDSET to ear and listen for rushing noise.

(4) Same as step I(3) above.

(5) To transmit, press PUSH-TO-TALK switch (11) on side of HANDSET (9), pause for a moment, and then speak in a clear, normal voice into MICROPHONE (12) of handset. Release PUSH-TO-TALK switch to listen.

Wearing of Uniform and Insignia

Officers.

Enlisted personnel.

Land Mines:

Single String of Antitank Mines . . . . . .

String of Antipersonnel Mines . . . . . .

Minefields:

Antitank . . . . . .

Antipersonnel . . . . . .

Radar Surveillance Devices (with type or set indicated)

Short Range Radar (AN/PPS-4). . . . . .

or

Medium Range Radar (AN/TPS-21). . . . . .

or

Long Range Radar (AN/TPS-25) . . . . . .

or

Radar Sec, Cmbt Spt Co, 1st BG, 87th Inf 87

Barrages

Btry A (105mm), 1st How Bn (105mm/155mm)(Towed), 7th Arty . . .	A-1/7	200 meters
Btry B (155mm), 5th How Bn (105mm/155mm)(SP), 7th Arty	B-5/7	300 meters
Hv Mort Plat, 1st BG, 87th Inf	1/87	300 meters
1st Sec, Hv Mort Plat, 1st BG, 87th Inf	1-1/87	150 meters
Mort Sec, Co A	A1-3	100 meters
One tube, Mort Sec, Co A	A1	50 meters

Steps To Operate The AN/PRC-10.

A. Disengage two lower latches (not shown on photo) along side of case and separate receiver-transmitter from battery compartment.

B. Insert battery into battery compartment, socket up.

C. Connect power cable plug to battery socket using flat portion of center lug as guide. Keep D-Ring above plug.

D. Assemble short antenna and connect it to SHORT ANTENNA CONNECTOR (1).

E. Connect handset (not shown) to the AUDIO CONNECTOR (2).

F. Unlock the dial by turning the DIAL LOCK (3) counterclockwise.

G. Turn the POWER switch (4) to the ON position.

H. Turn the TUNING KNOB (5) until the whole megacycle (or red dot) nearest your operating frequency is in center of DIAL window (6).

I. Turn VOLUME control (7) fully clockwise.

J. Turn SQUELCH CONTROL (8) off (rushing noise should be heard in handset).

NOTE: If no rushing noise is heard, open case and check battery connection. If rushing noise is still not heard, replace battery. If rushing noise is still not heard, set is inoperative.

K. Hold POWER switch (4) in Cal & Dial lite position and adjust TUNING KNOB (5) until zero beat is obtained. As tuning knob is adjusted, with power switch in Cal & Dial lite position, a faint, very high pitched whistle is audible in handset. Zero beat is obtained when high pitched whistle drops to lowest register. Correct dial mechanically by moving POINTER (9) over calibrate frequency by means of POINTER ADJUST (10).

L. Tune to operating frequency by means of TUNING KNOB (5).

M. Lock DIAL (6) by turning DIAL LOCK (3) clockwise.

N. Contact distant station. If no contact is established, remove short antenna and install long antenna. Call distant station again.

O. Adjustment of SQUELCH CONTROL (8).

(1) SQUELCH CONTROL will eliminate rushing noise heard on handset. Proper way to adjust control is by turning clockwise until rushing noise disappears. Do not continue to advance knob beyond that point, as it will decrease sensitivity of set needlessly.

(2) It is possible to receive transmissions from a distant station when SQUELCH is off, and not be able to receive the same station after rushing noise is eliminated.

(3) Before eliminating rushing noise, ensure that you are able to receive transmission from all stations in net, then adjust SQUELCH CONTROL. If you are unable to receive all stations in net after eliminating rushing noise, turn SQUELCH CONTROL off and keep it off.

PICTURE OF A PROFESSIONAL SOLDIER

Whether he is in the Active Army or the Reserve Components, the true professional keeps his military knowledge up to date.

One excellent means of doing this is to utilize Infantry School texts which are available through the Book Department. As an example, here are just a few of the texts which might prove of value to you:

ADVANCE SHEETS:

Infantry and Airborne Div	$1.25
Rifle Company, Infantry and Airborne Div	1.00
Combat Support Company, Infantry Div	1.00
Offensive Tactics, Rifle Platoon and Squad	1.00

SPECIAL TEXTS:

23-92-1—4.2 Inch Mortar Gunnery	2.00
7-179—U.S. Rifles, 7.62 mm, M14 and M15	.45
Communication Data	1.10
Infantry Reference Data	1.20

HANDBOOKS:

Operations & Training	$1.75
Artillery	.80
Airborne	.80
Combat Logistics	.45

It's in the Regulations!

According to AR 670-5, the Army has now adopted a standard name plate. This authorized name plate is available at the Book Department.

Name tag engraved with last name only—

With pin-through, clutch-back fastener (for wearing in any position) (1): . . . . . $ .50

With clip-on, alligator-grip fastener (2) (Also may be ordered with fastener inverted so that tag can be worn with civilian clothing): . . $ .50

With safety-pin fastener (not shown) for wearing in any position: . . $ .60

To obtain information on other items which may be purchased from the Book Department, write for the free catalog.

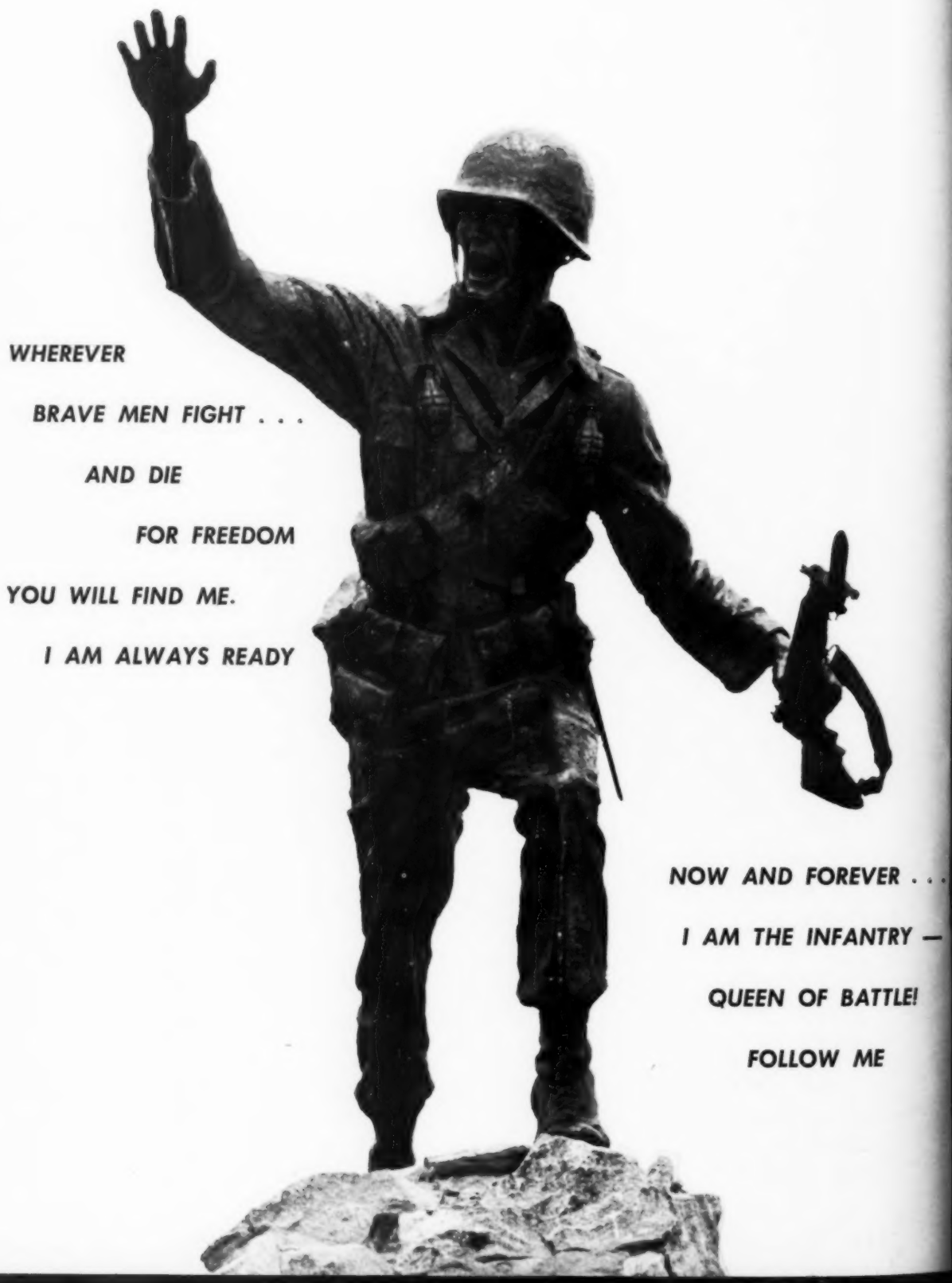
THE BOOK DEPARTMENT, THE INFANTRY SCHOOL, FORT BENNING, GEORGIA

Send order with full purchase price plus 5% for purchases over $5.00 or a minimum of $ .25 for postage and handling charges.

WE DON'T CARE . . .

How you send the message. If you use flags, mail, carrier pigeon or telephone, we'll be happy to get the word on your change of address. This way, we'll be able to ensure that you don't miss any of your copies of *Infantry*.

If you know of an impending change of station, drop us a card and we will hold your copies of *Infantry* until you are settled . . . and thanks.


WHEREVER
BRAVE MEN FIGHT . . .
AND DIE
FOR FREEDOM
YOU WILL FIND ME.
I AM ALWAYS READY
NOW AND FOREVER . . .
I AM THE INFANTRY —
QUEEN OF BATTLE!
FOLLOW ME